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THE MISCELLANY

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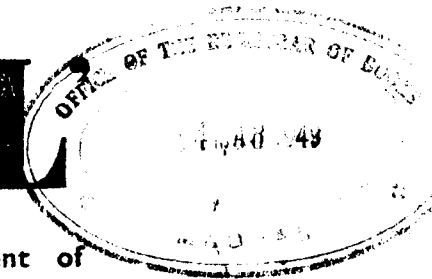
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[No. 7

ENIGMATIC TALES TOLD WITH CLUES—(PART II)

BY

Lieut. Col. P. V. KARAMCHANDANI, M.B.B.S., F.R.C.P., (Edin.), Late I.M.S.,
District Surgeon, Bellary.

Introduction

What is the aetiology of cirrhosis of liver, what are the easily distinguishable types, what is the relationship of hepatic cirrhosis with nutrition, what are the reliable tests of liver disfunction and what is the rationale of therapy? On aetiology depends everything else. This aetiology has been an enigma so far. Workers from time to time have put forth various theories following various tracks. Some recent clues have come to hand at last. It is probable that these clues may provide a satisfactory answer. I intend discussing these in this article.

Aetiology

The author raised a point of order 3 years back (F. V. Karamchandani 1946.) Several hundreds of cases commencing with lassitude, general malaise, anorexia, nausea, vomiting, fever, later on jaundice with biluria and enlarged liver kept pouring into the military hospitals under his medical care from 1942–45. They were labelled "infective hepatitis". There was history of contact with other soldiers who had suffered before. What he saw during these 3 years was quite different from what he had been used to see during the previous 30 years of his tropical practice. Some of these

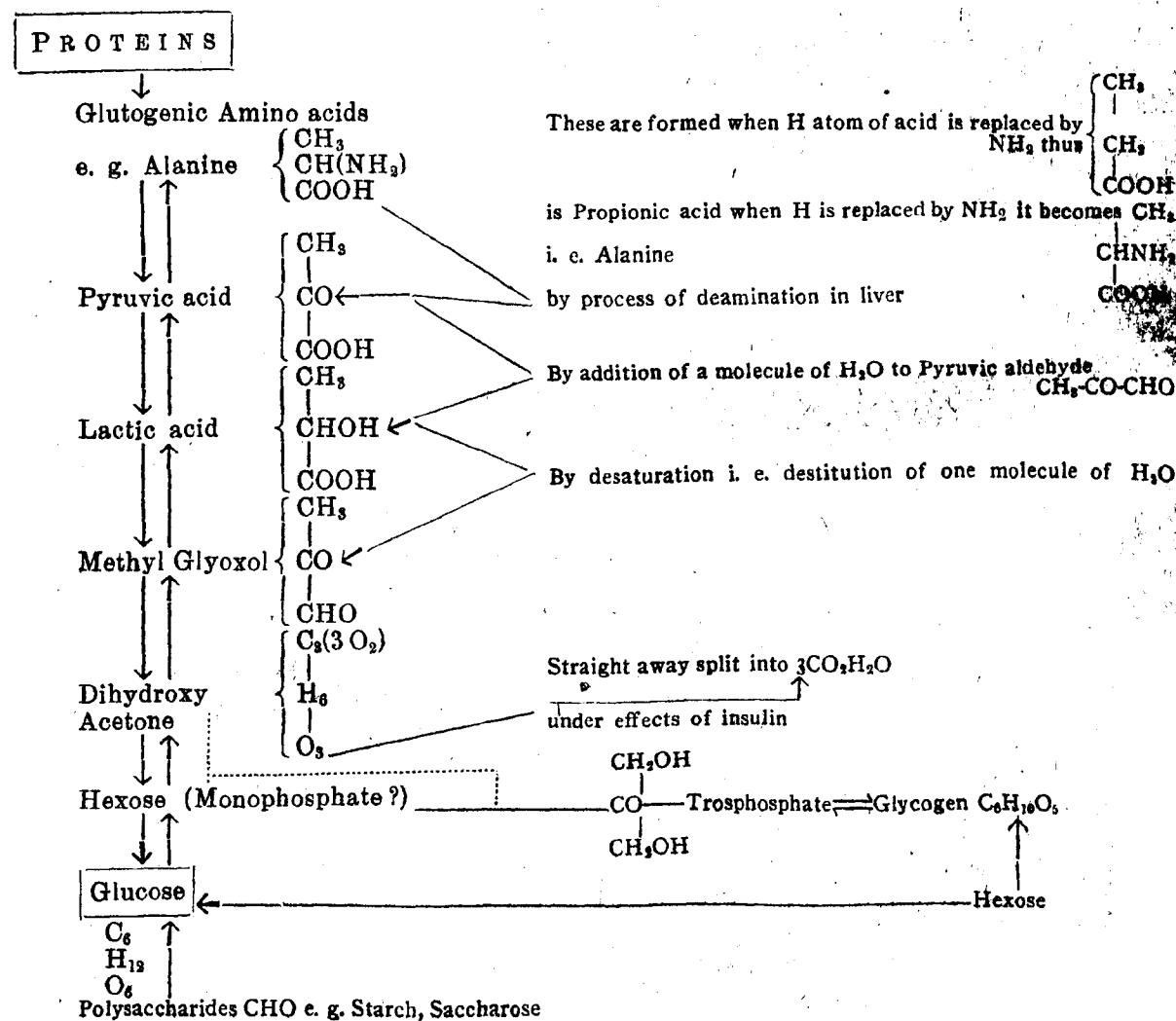
cases slipped into diffuse acute massive necrosis with delirium, insomnia, restlessness, finally coma and death. Histopathology of the liver revealed two distinguishable types: (a) In one type the liver parenchymal cells had disappeared, leaving only the reticular frame work filled with dilated venous sinusoids. Here and there appeared well marked degeneration of liver cells, and stroma infiltrated with inflammatory cells. (b) The parenchymal cells presented a soapy appearance with eccentrically placed nucleus and inclusion bodies not unlike the Councilman type of bodies. In other words it was a picture of toxic cirrhosis with icterus. Others after a period of about 6–8 weeks were apparently cured and resumed duty. A few dragged on to a chronic stage of nodular cirrhosis with ascitis—a picture clinically indistinguishable from that of Laennec's cirrhosis. This was clue No. 1.

When the war ended and the I.M.S. reverted to the civil, the author found himself landed in the Government Headquarters Hospital, Trichinopoly. This hospital received many cases of cirrhosis of liver with a long history of failing health, but no jaundice. There were some whose liver was enlarged but smooth, who had some ascitis but no hepatic tenderness. There

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CHART



January, 1949]

CHEST PAIN

Summary of Dr. K. S. Sanjivi's remarks in opening a Symposium on Chest Pain at the Third South Indian Provincial Conference held at Madras on Friday, 22nd October 1948

Our knowledge of the causes of pain in the chest is meagre compared to that as regards abdominal pain. This may be because patients with obscure abdominal pain are more frequently subjected to surgical exploration and the correlation between the symptoms and signs established. As regards pain in the chest, however, the surgeon in India still requires a lot of encouragement to do a thoracotomy and therefore diagnosis in the obscure case can be arrived at only by autopsy which is seldom obtained in our country.

(A) Physiological Mechanisms

(1) The method of production of the pain of cardiac ischemia in Angina Pectoris and Coronary Thrombosis and the detailed clinical picture of patients with such cardiac pain were fully explained.

(2) The origin and distribution of pain in diseases of the parietal and the diaphragmatic pleura (central and peripheral part) were discussed.

(3) It was shown how the pain and rigidity produced by cardiac ischemia could be mimicked by stimulation of appropriate (8th cervical) interspinous ligaments as by the injection of a 6% saline locally and how that area can be involved in disease processes.

The nervous connections involved in the appreciation of the above pain mechanisms from the body wall, deep somatic structures and the viscera were illustrated with diagrams.¹

(B) Clinical conditions giving rise to Chest Pain

These were discussed from the point of view of a physician under the following headings:—

(1) Thoracic Parietes:—

(a) Herpes Zoster:—The pain at the place at which the Herpetic eruption is to appear later, heralds the onset of the disease; accompanied by fever; the pain is of a burning and itching quality and may be intense; in frail and elderly persons a most intractable post herpetic neuralgia may persist for months.

(b) Pleurodynia:—This term includes fibrositis of the intercostal muscles and membranes. Here the pain is increased by deep inspiration, coughing, by muscular movements and by local pressure. But there is no rise of temperature, and no friction sound. The patient may show manifestations of non-articular rheumatism elsewhere in the body.

Another variety of pleurodynia is the epidemic infectious disease known as Bornholm disease, originally described in children under fifteen. It has however been described by Scadding² in army personnel in the Middle East during the last War.

(c) Intercostal Neuralgia:—The pain is often periodic; follows the course of the nerve; may be influenced by movement but not so much by respiration; tenderness over the points of exit of the posterior primary, lateral or cutaneous branches of the nerve affected.

(2) Spinal Causes:—This may arise in the nerve elements themselves as in the crisis of Tabes Dorsalis and extra medullary tumours or in the coverings of the cord as in meningeal inflammation (e.g. syphilitic pachy meningitis); extra dural causes (e.g., tuberculous abscess, deposits of lymphoma, parasitic cysts) and vertebral diseases (e.g., Pott's disease and secondary Carcinoma). Several cases of dorsal spine radiculitis with acute attacks of anterior thoracic pain closely simulating coronary artery

disease have been described in recent literature.³

Although most of these conditions require the services of a surgeon in their treatment, their diagnosis has frequently to be made by the physician.

(3) Sub-diaphragmatic causes of Chest Pain:—

(a) Flatulence as in aerophagy, intestinal carbohydrate dyspepsia and Colon Neurosis.

(b) Duodenal ulcer; pylorospasm secondary to disease of the gallbladder; oesophageal hiatus hernia.

(c) Amoebic hepatitis and hepatic abscess:—

Amoebiasis is perhaps the most important cause of morbidity among our hospital class accounting for over 10% of all the admissions into a general hospital. It is essential that this condition should be diagnosed in the first attack and suitable therapy instituted if the patient is not to become a chronic invalid and an economic burden on society.

(d) Carcinoma of the liver; the pain is in part due to a stretching of the capsule of the liver but the most severe pain is due to Perihepatitis.

(e) Gallbladder disease:—The frequent association of gallbladder and coronary pathology in the same individual should be borne in mind as both occur in the same type of individual.

(f) Perisplenitis:—In malaria; may simulate left-sided pleurisy.

(4) Respiratory Diseases:—

(a) *Pulmonary Tuberculosis*:—In this disease pain may be due to one of the following causes:—

(i) Dry pleurisy (ii) Dull aching pain in the chest, more noticeable in damp weather, in chronic fibroid pleurisy, caused by the contraction

of fibrous tissue. (iii) Pain due to the strain of repeated cough. (iv) A complicating cold abscess or a cachectic neuritis. (v) Spontaneous pneumothorax.

More will be said about pleurisy and spontaneous pneumothorax under the heading of Diseases of the Pleura.

(b) *Acute Massive Collapse*:—Pain in the lower part of the thorax or behind the sternum common at the onset.

(c) *Infarction of the Lung*:—Sudden pain; difficulty in breathing followed in a few hours by cough with hemoptysis and fever.

(d) *Lobar Pneumonia*:—Pain may be severe at the onset becoming less as the cough becomes more effective.

(e) *Primary Atypical Pneumonia*:—Although actual pleurisy is considered rather rare in this disease, many patients complain of pain in the course of this illness.

(f) *Primary Carcinoma of the Lung*:—Pain (50 to 60 percent) when severe is usually a symptom of extension to the parietal or mediastinal pleura. It suggests invasion of the intercostal or the first dorsal root of the brachial plexus (Pancoast). A constant dull pain referred to the back is presumptive evidence of mediastinal invasion and as such points toward an inoperable stage of the disease. Discomfort and other sensations arising in the chest for which the patient cannot always find adequate verbal expression are often described as pain, but not of real severity. They may arise from an inflammatory reaction, the distortion produced by partial atelectasis or from mediastinal involvement. (Churchill)⁴

(g) *Diseases of the Pleura*:—

(i) Pleurisy of different types give rise to a pain that is constant and unmistakable. It is a sharp sticky pain (a stitch in the side) aggravated on

breathing causing the patient to splint the affected side of the chest by a conscious limitation of voluntary movement.

(ii) Spontaneous pneumothorax, benign and tuberculous.—A tuberculous spontaneous pneumothorax rapidly becomes a hydro pneumothorax. But if the definition of spontaneous pneumothorax is air reaching the pleural cavity from the side of the visceral pleura, pulmonary tuberculosis undoubtedly accounts for the vast majority of cases of spontaneous pneumothorax. It is wrong to imagine that sub-pleural emphysematous bullae and congenital cystic disease of the bronchi account for most cases of spontaneous pneumothorax although they do for most of the "benign" ones.

(iii) Endothelioma.

(h) *Diseases of the Mediastinum*:—

(i) The space occupying lesions arising in different sites may be classified as follows:—

Tumours of the Thyroid (sub-sternal): Tumours of the Thymus—Hyperplasia etc.; Tumours of the nerve tissue—Neurofibroma; Sympathico blastoma; Hour-glass tumours: Connective tissue tumours. Lipoma, fibroma, chondroma, myxoma: Tumours of the trachea and oesophagus: Tumours of the lymph glands—acute inflammation; tuberculosis; Hodgkin's disease; Leukemia; lympho-sarcoma; metastatic tumours: Cystic tumours—dermoids; teratomas; hydatid cyst: Vascular aneurisms of aorta; aneurisms of heart: Tumours of pericardium and heart; cysts and diverticula of the pericardium.

(ii) Mediastinal Emphysema (Hamman's Syndrome) which can be recognised by the collar of surgical emphysema, and the peculiar crunching noise over the precordium. This syndrome is rare in pulmonary tuberculosis; it seems to occur more readily in patients with severe asthma.

(5) Diseases of the Circulatory System:—

(a) *Cardiovascular Syphilis*.

(i) *Syphilitic Aortitis*:—Pain may superficially resemble that seen in coronary disease; but is not brought on by exercise; not constricting in type; more boring and constant; more troublesome at night.

(ii) *Aortic Aneurysm*:—Pain most severe when the aneurysm causes erosion of bone or sternum, dissecting, leaking or rupture.

(iii) *Anginal Pain*:—Brought about by narrowing of the orifices of the coronary vessels or inadequate filling of the coronary vessels in aortic regurgitation.

(b) *Rheumatic Heart*.

(i) *In Acute Rheumatic Pericarditis*:—Pain often severe. Formerly, it was thought that this chest pain was due to the inflammation of the pericardium but certain studies have shown that the pericardium is for the most part insensitive to pain; the pain perhaps is due to an associated pleuritis. Although the explanation is obscure, pain in the heart region is quite common.

(ii) *In Acute Rheumatic Disease*:—Pain in the precordium is frequent and may be quite severe even without any evidence of either carditis or pleurisy.

(c) *Coronary Artery Disease*.

(i) *Angina Pectoris*:—

The invariable mechanism is anoxemia of the myocardium. This may be brought about by several ways, e.g., (1) disease of the coronary artery as in arteriosclerosis or diabetes, (2) aortic insufficiency (a low pressure in the diastolic period when the heart muscle is supposed to get its blood supply); (3) severe anemia, (4) hyperthyroidism, (5) paroxysmal tachycardia, (6) narrowing of the mouths of the coronary arteries

in syphilitic aortitis, (7) tobacco. In all the above instances insufficiency is caused by an alteration in the ratio.

Coronary Need

Coronary Flow

The state of the coronary arteries remaining the same, why should the pain of angina be related to exercise, food or emotion. The additional trigger mechanism produces the same effect as the injection of a few minims of Adrenaline Hydrochloride. Finally the threshold for pain and the perception of pain vary from one individual to another.

Considering that sudden death⁵ in the course of heart disease is due to myocardial ischemia in over 92% of cases and the death takes place on exertion in a third, quietly at home in a third and while performing gentle social activities in a third, the physician should decide definitely whether his patient with suggestive pain has angina pectoris or not. Practically every physician should have had the experience of confidently assuring some patient or other that his pain was due to a flatulent dyspepsia and learning a few days later of the sudden death of the patient. The need for a decisive opinion therefore is so great that occasionally tests to induce angina pectoris may have to be employed.

(ii) *Coronary Thrombosis*:— The importance of heredity, diabetes and hypertension as etiological factors were discussed. In diabetics the severity of the coronary arteriosclerosis is correlated with the duration rather than with the severity of the diabetes and death due to coronary disease is more common when hypertension is coexistent than when the blood pressure is normal.⁶ Indeed it has been stressed that pain in the chest in a middle-aged diabetic patient should be considered as angina pectoris unless some other disease can be shown to be the definite and sole cause of the complaint.

The usual clinical features were discussed and attention was drawn to two important points not commonly realised, namely, that coronary arteriosclerosis can occur in persons below forty years of age and a transitory rise in the blood pressure may occur at the time of the acute attack, the fall only commencing a few hours after the onset.

(d) *Functional Heart Disease*:— Cardiac Neurosis; Neuro-circulatory astheria; effort syndrome—important to recognise the condition as distinct from organic heart disease. Also remember the emotional factors that may bring on organic heart disease such as hypertension or angina pectoris and the anxiety state that may result from organic heart disease. So the superimposition of a neurosis on a basic organic lesion can present difficulties.

One should remember the recent emphasis on psychosomatic medicine and the need for the physician going deeply into the life situation of the patient in every case.

(C) Diagnostic Procedures

It is of the utmost importance to obtain a careful history and the description of the pain—its location, radiation, character and method of induction; its relation to respiratory and spinal movements, to fever, cough, breathlessness, hemoptysis and jaundice. A thorough physical examination including repeated records of blood pressure should then follow. X-rays may be required in the diagnosis of one of the obscure causes and the electrocardiogram to confirm the presence of coronary artery disease; but in a surprisingly large number of cases the symptoms and signs would alone suffice to arrive at the diagnosis.

(D) Treatment

It is obvious that the treatment depends on the actual cause of the

pain. It is neither possible nor necessary to detail fully the treatment of the several conditions mentioned above. A few of the recent advances in their therapy will be mentioned.

(1) In tuberculous pleurisy the local instillation of streptomycin (100 mgms.) with the indications for paracentesis remaining the same orthodox ones as before, has often produced a very rapid clearing up of the radiological opacity. It is possible that similar local treatment with paraaminosalicylic acid may also yield good results. Both drugs however await further trials.

(2) *Cardiovascular syphilis*:— This forms the subject of a separate Paper during the Conference and so need not be discussed fully. One may mention however that the dangers of severe untoward reactions with penicillin in cardiovascular syphilis may have been overemphasised by the earlier workers on the subject, as recently very satisfactory results have been reported with penicillin.⁷

(3) *Coronary Artery Disease*:— The recent advances in the proper management of diabetes and hypertension which are the frequent forerunners of this condition were briefly touched upon. Kempner's⁸ rice diet in hypertension was explained. The place of Dicumarol⁹ in myocardial infarction was discussed and the conclusion that it is probably a useful drug to be used with caution in selected cases only was drawn.

A brief reference to "functional thyroidectomy" with propyl thiouracil and to sympathetic surgery in angina pectoris was made.

(4) The management of the pain as such in cases of "rheumatism" or when the cause is still under investigation was dealt with with special reference to the two new analgesics:

(a) Pethidine (Dolantin, Demerol, S 140) was first introduced as a synthetic

substitute for atropine. It was soon found that it not only possessed spasmolytic powers similar to atropine but had a marked analgesic effect. May be given by mouth 25 to 100 mgms. or by I. M. injection in 100 mgm. doses. There is the risk of addiction though it is much less than with morphine.

A fall of blood pressure and depression of respiration have been noted with large doses. Excessive doses also caused nervousness, irritability, dryness of the mouth and sleepiness. In the usual dose of 100 mgms. repeated at intervals of more than 4 hours Pethidine is quite safe with no toxic effects. The digestive upset often noted with morphine is not so frequent with pethidine.

(b) Amidone¹⁰ (Miadone, Hoechst—10820, Methadon, Dolophine, Physeptone).

This drug is about as potent as morphine and ten times as potent as Pethidine.

As it produces as much Euphoria as morphine and pethidine, it must be considered a possible drug of addiction. Other side effects such as giddiness and blurred vision, nausea, vomiting are less frequent with amidone than with morphine.

That Amidone is more of a respiratory depressant than pethidine is suggested by certain obstetrical reports.

The dosage is 2.5 mgms. given orally every 4 to 8 hours or 7.5 mgms. by an intramuscular injection.

In conclusion the speaker made a plea for a correct and logical diagnosis in every case and said the highest ideal of any physician, especially if he is a consultant, should be that his diagnosis is irrefutable by any other authority in the world even if the patient chooses to go to London or Boston.

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PRESS NOTE No. 12

Dated Fort St. George, 26th January 1949

"The public are hereby informed that in pursuance of the provisions of the Dentist Act, 1948 (Act No. XVI of 1948), the Government of Madras have directed that this Province should have an independent Provincial Dental Council of its own. Government have also notified the constitution of a Registration Tribunal for the purpose of preparing a Register of Dentists. Government have further notified that applications for entry into the first register are to be made on or before 31st March 1949."

(For further information please refer to the above press note, or to the Managing Editor.)

NEW DOCTORS

The following is a further list of those who have passed the Final M.B.B.S. examination in Madras in December 1948.

- | | |
|-----------------------------|--------------------|
| 1. Dr. S. Krishnamurthy Rao | 3. Dr. A. Purnan |
| 2. Dr. K. Mahalingam | 4. Dr. T. Achuthan |
| 5. Dr. T. George | |

January, 1949]

FOLLOW YOUR NOSE

Extracted from E. E. N. T. Journal, July 1948

On the scale of time, the nose is a comparatively recent organ which has reached a state of some esthetic perfection in the human animal. That the nose was used as a landmark in early mythology is signified by its representation in outlining some of the constellations. Many of these star groups represent animals, and in some of these a large star marks the tip of the nose. This is particularly notable in Pegasus (horse), Leo (lion) and Taurus (bull).

It seems to be an open question, whether this facial feature in man may not in the distant future become vestigial as other unnecessary organs have done. But as Tristram Shandy remarked, "'Mayhap there is more than is said in it,' quoth my father, 'learned men, brother Toby, don't write dialogues on Long Noses for nothing.'"

But the internal nose is something entirely otherwise, and its importance to its owner reasonably leads to the conclusion that it is a more permanent piece of "furniture," as William Hunter might put it. The whole, of which these two are parts, is familiarly recognized as providing both for olfaction and respiration, and it will be in this dual role that we propose to follow our nose.

Some time ago, someone used the expression, "where the blue begins." That is an indefinite and distant point, but much nearer than that at which the nose begins. If we take the scientists' word for it, as we propose to do here, we start with the idea that all life on this globe began, at the time of its birth, in an expanse of unlimited water. So now, if you will step into this magic carpet with me, we will journey swiftly over this watery world from the beginning of time, keeping a sharp lookout until we

see the first sign of anything that suggests the beginnings of what we now know as a nose.

The first visible forms of animal life that we see are shapeless drops of a jelly-like substance, intent only on finding food to sustain life. Even in this, we see something that suggests the distant human heritage! Food is taken up by a simple enveloping method. To see these forms, we shall have to use a peculiar microscopic mechanism—perhaps our own paineal eye—since they cannot be seen by our usual optics.

But by the time we have skimmed over this watery waste an exceedingly long distance, measured in terms of time, we see this primitive life form appear as a jelly fish. Here, an enormous change has taken place, though the creature is still devoted intently to food-finding. Instead of being a single microscopic body, or cell, it has become many-celled and the parts are arranged in two distinct layers, in one of which a mouth-like opening has formed.

We sail on through space so rapidly that we cannot examine all the changes as they take place during the long millions of years, but by the time the first land appears on our very distant horizon, we begin to see forms of life which have a definite head and tail end, that have not been present long, and then soon after we see this form we can also detect a ciliated pit above the head end, which serves for its primitive olfaction. After a relatively shorter time, two pits appear—one on either side of a snout-like process, lying just within the skin layer.

What we have just seen are the primitive ancestors of fishes, which still have pits on either side of the upper lip today, but no passageway leading

followed by all the primates also; and among the older forms, as the lemurs, there is a moist patch at the tip of the snout, which in the higher ones gives place to a true nose.

The mammalia furnish the greatest possible diversity of shape and size of the nasal organ. In this part of the world, where so many of the mammalian animals are domesticated, there is less picturesque variety than in tropical regions and less closely settled continents.

The nose in our domestic animals is familiar to everyone, and not notable, but if we visit the tropics or the zoo, we find such remarkable sights as the anteater, with its long nasal process; the tapir with an abbreviated elephant trunk for a nose, or combination of nasal passages and upper lip. The tapir is not closely related to the elephant, however, but belongs nearer the horse and the rhinoceros. Though this animal is now found only in South America, time was when he must have roamed through Europe and our United States, since his fossil remains have been found in both these countries. In these travels, we shall also be able to see the toucan with its enormous bill, and many other birds with equally interesting, though less overcoming nasal contours.

A glance at Africa suggests that she has everything in the way of picturesque nasal "furniture." There is the enormous nose of the hippo, almost incredible in its grossness. His nearest relations are the pigs. But unlike them, he has protruding nostrils which allow him to be completely submerged in water and still be able to breathe freely.

There is the rhino, named for his nose which is adorned with horns that are unique developments from hair.

But the most grotesque nose of all is that of the elephant, whose upper

lip has joined his nose in a prehensile extension to form the trunk, which has on the tip of its upper border a finger-like process which refines its ability to grasp small bodies.

Here we also see the camel with its velvet nose and long upper lip, and the giraffe which browses on the tops of trees, with the mobile nasal tip.

Africa alone should not be credited with these, diverse museum specimens, since many of them are at home in Asia and the surrounding islands.

Now that we have reached the primates in our journey, we also approach nearer to the nasal organ of man. Most of the members of this group have relatively flat and unobtrusive noses. Some, however, like the long-nosed monkeys, and the mandril from West Africa called rib-nosed and the most hideous of the baboons, have more or less prominent nasal organs.

It has been demonstrated that the internal nose of Old World monkeys and of men are nearly identical. The chimpanzee and the gorilla approach man even more closely in their nasal apparatus because both have become provided with frontal sinuses. The external nose of primitive man was very much like those of the apes. Both represent "divergently modified derivatives of a common pro-anthropoid stock." (Gregory)

Here we have completed our brief and rapid panoramic view of the nasal scene, about which a question has been proposed (Gregory) that has never been satisfactorily and finally answered. What forces acting upon the primitive vertebrate skin caused one set of epithelial cells to become sensitive to olfactory stimulation in contrast to others which responded to light, and so on. If we are unable to give an answer to this question, we can certainly agree, at least, that learned men do not write dialogues on long noses for nothing!

January, 1949]

ABSTRACTS FROM THE CURRENT MEDICAL LITERATURE

SNORING—*Ian G. Robin—Clinical Journal Nov. Dec. '48.*

This short paper is a plea for the more serious consideration of a complaint which is often a distressing physical and mental handicap. It may ruin a happy marriage, and in some parts of the U.S.A. it is considered justification for divorce. Up to date it has been treated as a comic pastime, and the unfortunate adult sufferers (and even more the agonized relations and associates) have to bear with it in fear of ridicule.

There is almost no world literature on the subject except for the Japanese observers who have devoted some time to it. But we can gain some useful information on the matter from recent work by anatomists and orthodontists who have been studying the mechanism of palatoglossal movements and their relationship to mouth breathing. I am indebted to Dr. J. Whillis, Mr. Gwynne Evans and Mr. A. Nove for most helpful personal conversations.

Definition:—Noisy respiration during sleep may be produced during inspiration and expiration by various structures in the respiratory tract. I propose to limit snoring to sounds made by vibrations in the soft palate and posterior faucial pillars during sleep. This definition excludes sounds made by laryngeal structures including the epiglottis, by the tongue, cheeks, lips or nostrils. Snoring is usually produced during inspiration through the mouth. Sometimes, however, breathing is through the nose (Negus says this occurs in some "gifted individuals"). A short inspiratory snore through the nose with the mouth open may be called a "snort" and some persons are addicted to a series of snorts. Snoring is involuntary; it stops as soon as consciousness is regained.

Mechanism:—Whillis has shown very clearly by means of a pharyngoscope that the vibrating part in a snore is the thin edge or velum of the posterior faucial pillars. He proves that a reservoir of air is necessary in the nasopharynx; if this space is completely filled the velum cannot vibrate. He also demonstrated that the

velum is set in vibration during respiration (usually inspiration) when a "critical point" or position is reached in the relative position of the tongue and soft palate. But not only is it position that influences the vibrating parts, it is the texture of the velum, and this depends on the tone of the musculature of the glosso-pharyngeal arch, and the thickness of the tissues (especially the mucosa). The actual pitch of the sound is determined by the so-called "flutteration" of the faucial pillars; Strauss likens the physics to a fluttering flag in a wind—any increase in the force of air intensifies the noise, but does not change the pitch. This depends on the density, elasticity and size of the vibrating part.

Position of the soft palate. When sucking, the infant's soft palate is in close apposition to the back of the tongue (fluid being squirted intermittently back into the pharynx). A suckling is therefore unlikely to snore during sleep, as the relation between tongue and soft palate is unlikely to change. When the chewing habits develops the soft palate is raised away from the tongue. If mouth breathing occurs for any reason, the palate is free to vibrate. In adults the position is regulated by the tone of the muscles as well as the amount of airway in the nose. Nove maintains that a short ramus of the mandible makes the palate lie away from the dorsum of the tongue.

Position of the tongue. This plays some part in determining the "critical point". If during mouth breathing the dorsum is arched, or falls back, then it will be near to the velum of the fauces. The position of the head may govern that of the tongue. Sleeping on one's back is considered a common cause of snoring, because the tongue falls back more readily. The act of swallowing (the mechanism of which is so admirably described by Negus, 1942, Proc. R. Soc. Med. 36,85) actually inhibits that of snoring; there may be complete cessation or resumption, depending on whether the tongue returns to the snoring or "critical" position, and also whether the reflexes to be described are inhibited. With regard to the position of the tongue there seems to be no influence from the

presence or absence of teeth or dentures in the production of snoring. On the other hand an orthodontic "monoblock" or "Andresin" splint can mould the dental alveolar pattern (probably without changing the basal bone one) and so lead to less mouth breathing.

Tone of the glossopharyngeal musculature. This has a governing role for the "critical point," as it decides the positioning and elasticity of the parts. Gwynne Evans and Whillis agree that there is a "central reflex" determining the control of the muscle groups, i.e. muscle behaviour is patterned by the C. N. S. These patterns are inherent developments of inborn conditioned reflexes, predestined in foetal life. An inhibition of central control will thus upset the muscular balance. Gwynne Evans associates immobile palatolinguar with immobile orofacial musculature, as is the so-called "adenoid facies."

It can be put forward as a plausible explanation of snoring that during sleep there is a fall in adrenal secretion; this leads to a rise in parasympathetic over sympathetic action and therefore a diminution of tone in the palatal structures. In sleep there is said to be a rhythmic variation of depth, at first considerable depth, then lighter sleep, and then before waking another increase in depth. If this is true, one would expect snoring to occur more readily early in sleep and then just before waking. Actually severe sufferers snore all the time. In anaesthetized patients it has been said that a real snore does not occur—but this is not true—at any rate sounds just like snoring are heard. Dr. Vevers, of the Zoological Society, has told me that he has heard a chimpanzee snore under an anaesthetic.

Other factors influencing the position and tone of the glossopharyngeal structures. Certain conditions other than that of nasal obstruction lead to slight oedema of the palatal mucosa, or loss of tone in the muscular velum. Slight pharyngitis from working indoors, and from smoking, obesity, plethoric tendencies, and allergic manifestations have all been listed as aggravating causes. One observer has described snoring as one of the diagnostic signs of leprosy of the pharynx; if this were so, one would expect any granulomatous condition in the

pharynx to lead to snoring. That a mobile palate is essential for snoring is utilised by speech therapists in the "snoring test" in training cleft-palate patients.

I must mention that in America some prominence is given to the psychological aspect of causation. An article entitled "Does a contented person snore?" shows the trend of thought. It is considered that some snorers stop the habit when on holiday, and others have cycles of snoring periods regulated by psychological and endocrine factors. Personally I think this unlikely, but Gwynne Evans' theory of "central reflexes" makes it not impossible for basal or even higher centres to decide if and when we snore.

Aetiology. At first thought it appears that the explanation of snoring would be simple enough. Any organic condition causing nasal obstruction would lead to mouth breathing, and a snore would be unavoidable. But this is not so; mouth breathers do not all snore. Causes must be divided into organic and functional or, better, dysfunctional, and although the main predisposing cause may be organic there is usually a dysfunctional cause as well.

A. Organic causes. (1) **Nasal obstruction.** It is often the minor degrees of obstruction which lead to enough mouth breathing to initiate snoring, e.g. slight deflection of the septum, collapsed alae nasi, or moderate mucosal congestion. Dr. Vevers tells me that although he has never heard a wild wolf snore, many domestic dogs, all descended from the wolf, do so. He imagines this occurs in breeds with malformation in the nose and nasopharynx, caused by such conditions as achonodroplasia, as seen in pekinese, etc.

(2) Pathological changes in the pharynx may make the soft palate and faucial pillars more liable to be in a suitable physical state for snoring to be initiated.

B. "Functional derangements" — or "Dysfunctions" of the "central reflex" governing the tone of the glossopharyngeal musculature.

Age-groups. There are three main eras of snoring: In the child, the adult and the elderly person. In children the majority are cured by removal of their adenoids and

tonsils. The exceptions to cure include the persistent mouth breathers of "functional" origin and those with infective or allergic rhinosinusitis. The adult who starts snoring usually does so from some organic cause. Women snorers appear to be as numerous as men. The largest group of sufferers are elderly men and women. Lack of tone seems to be the fundamental cause.

TREATMENT. **A. Irrational methods.** Chief amongst these is amputation of the uvula, which used to be a popular practice. Removal very rarely gives much relief but it may modify the degree and pitch of the snore.

B. Rational methods. (1) **Remove or prevent nasal obstruction,** and so allow for cessation of mouth breathing. In some instances simple decongestive nasal drops before retiring will allow a peaceful night. In others various nasal operations may have to be performed. Benadryl is useful for some persons.

(2) **Change position of head to prevent tongue falling back.** Many persons snore only when on their back, and on some occasions the uncomfortable procedure of a cotton reel sewn into the back of the pyjamas is efficacious.

(3) **Alter position of tongue, soft palate and for jaws,** by breathing, swallowing and phonetic exercises, or by orthodontic "splints". The former aim at training the central nervous system to regain proper neuro-muscular control. The latter alter the shape of the mouth and thus try to guard against the tongue and fauces falling into the "critical" position.

In all these groups it is to regain proper central control of the soft palate, and break the habit of an inverted reflex.

(4) **Keep mouth closed during sleep.** This is done by wearing an "Andresin" splint (which is well tolerated by most children, but less so by an adult) or by the simple expedient of a strip of adhesive plaster across the corner of the mouth. After a short time this is well tolerated by many patients. An adequate nasal airway is of course essential.

C. Altering texture of soft palate and faucial pillars. Injection of a sclerosing solution into the pillars is advocated by

Jerome Strauss, though this enthusiastic surgeon has not been able to claim a high percentage of cures so far.

However, I feel we surgeons may have helped many potential future snorers by our effort at removal of their tonsils and adenoids—leaving them with nothing but a fixed fibrous band instead of nice mobile soft palate and faucial pillars!

CONCLUSIONS. Snoring is a symptom of unbalanced breathing caused by a combination of several physical conditions, some brought about by pathological and others by physiological disorders. Remedies must aim at preventing all these causes and not only one.

* * * * *

Surgical Antiseptics—The Practitioner August '48.

L. P. Garrod in an article on the subject in 'The Practitioner' August 1948 deals with some of the modern antiseptics. The drawback of the older antiseptics used to be due to one of two reasons, viz., their relative inaccessibility in the body and their being even more toxic to leucocytes and other important tissue elements than to bacteria.

The modern antiseptics considered are the Acridines, the Cationic detergents, the Sulphonamides and the antibiotics.

He considers practical antiseptics under three heads namely the disinfection of the normal skin, the disinfection of a recent wound and the treatment of established infections.

1. **The disinfection of the normal skin.**—It is impossible to sterilise the skin. Its resident flora consisting largely of non-pathogenic staphylococci and diphtheroids, is in part deeply situated and incapable of eradication. All that is possible or necessary is to destroy the "transient" flora, bacteria which have been picked up by contact and may include pathogenic species.

The time factor is important. It is theoretically absurd to use a slow-acting antiseptic such as an acridine or mercurial salt when its effect is expected to be achieved in perhaps less than a minute. If such reagents are used for the preoperative pre-

paration of the skin, this should precede the operation by an hour or so.

Iodine in the form of a 2% solution in 70% alcohol is a most efficient and rapidly acting skin disinfectant. Its drawback as a prelude to major operations is its damaging effect on tissues which may be contaminated with it by contact with the wound edge.

Alcohol has many advocates and is undoubtedly a good antiseptic in a 75 to 80% strength for use on skin.

Quarternary ammonium compounds (zephyran, cetavlon, etc.) have a marked cleansing action also and hence are very useful for application to surgeon's hands before donning gloves. For emergency hand disinfection, one of the ordinary coal tar disinfectants or dettol may be used. The last named can be used undiluted and is said to protect the skin against recontamination for some time.

2. The disinfection of a recent wound:—For an extensive lacerated wound heavily contaminated with dirt, probably the best reagent for preliminary treatment is a solution of a quarternary ammonium compound such as cetavlon more for its cleansing than its antiseptic action which is much impaired in the presence of blood. The necessary surgical treatment follows. Whether or no suture is then possible or advisable, a cavity remains in which pathogenic bacteria may still exist in small numbers. All antiseptics fit for application to a large area such as this are slow-acting and the best way of ensuring their continued activity is to apply them in solid form. Of the sulphonamides, sulphathiazole has the optimum degree of solubility. The cavity should thus be dusted with sulphathiazole powder and to this may be added either an acridine or penicillin. The usual proportion is 1 part of Acridine to 99 parts of sulphathiazole. Examples are "Thiazamide" and "Flavazole".

The alternative to an acridine is penicillin which should be added as the calcium salt to sulphathiazole so that 1 gm. of powder contains 5000 units of penicillin. The same preparation can be used as a snuff for the treatment of nasal and nasopharyngeal infections and carrier states when the organism is a staphylococcus, or streptococcus

or diphtheria bacillus or meningococcus. Penicillin is more potent than the acridines but has a more evanescent effect.

3. The treatment of established infections:—The problem of the effective treatment of chronic suppuration depends first upon ascertaining the nature of the infection. The sulphanamides are relatively inactive in pus and only the most sensitive bacteria such as haemolytic streptococci can be attacked by them. For other infections the choice lies between the acridines and penicillin.

Acridine is very valuable owing to the prolonged effect ensured by the slow solution of the not too soluble powder. But the new position is probably correctly assessed by Rank when he says "It seems to me that what can be done by other antiseptics can be done with penicillin appropriately used, more often, sooner and with more uniform good results."

Gram-negative infection due to *Ps. pyocyanea*, *Proteus* and coliform bacilli present a special problem. The acridines have much less effect on them and penicillin in most cases none. The best for these cases is streptomycin, applied by spray or as a wet dressing it will often sterilize an accessible wound overnight. Other antiseptics against gram-negative organisms are phenoxetol and urea or urethane combined with a sulphanamide.

* * * * *

Why Patients Don't Pay—General Practitioner—November '48.

Only 11 per cent. of the average physician's collection losses are inevitable. Most of the remaining 89 per cent. could be prevented by simple improvements in the office business routine and by a specific financial agreement with each patient before he is billed.

These are findings of the Alameda County (Calif.) Medical Association in a recent study of 1,500 bad accounts. The association's bureau of medical economics, in charge of the survey, knew that patients' answers alone might prove misleading. So it carefully balanced these replies against physicians' reports and against the known facts.

For example, most delinquents claimed they could not afford to pay. But bureau investigators found that two-third could afford to pay and the actual causes of non-payment came under other headings.

The survey is significant primarily because it digs into the real reasons behind the fancied grievances that often cloud the no-pay issue. Following are the causes to which investigators attributed non-payment in the 1,500 cases studied (percentage are based on delinquent accounts only: they do not represent total practice).

Slip-ups in office business routine 30 per cent: Leading examples were no billing, insufficient information to trace "skips," statements not itemized, and no collection follow-up. In about one case out of ten, the investigators learned, the doctor's office lacked such basic information as address, employer or telephone number.

Lack of financial agreements with patient—20 per cent: In many of these cases, the bureau found, the patient was never told, prior to billing, the probable cost of treatment. In other cases, the patient was jolted by incidental expenses for such items as X-rays, laboratory work, consultants' services, and anesthesia.

As a result of its findings on this point, the bureau suggests a standing rule that physician and patient come to a financial agreement in advance on any service worth more than \$10. Such an understanding would cover the specific method of payment—even the amounts to be paid on given dates.

Inability to pay—19 per cent: Patients in this category were out of work or faced with other emergency expenses. Yet in only a few cases, the investigators found, were reduced fees indicated. Most of the people needed only additional time to tide them over a temporary rough spot.

Dissatisfaction with treatment—3 per cent: What usually led to non-payment in these few cases, says bureau, was either an admission of failure by the doctor or not letting the patient know what results to expect.

Other reasons for non-payment—28 per cent: The bureau described 11 per cent of all delinquent patients as "deadbeats."

Another 10 per cent were listed as "chronic slow-payers." Only 2 per cent refused to pay because they thought the fee excessive. In remaining 5 per cent of the cases studied, the reason for non-payment ranged from disputes concerning legal responsibility to personality clashes with the doctor or his aide.

The Alameda survey has been adjudged a double-barrelled success: as an air-clearing step in medical public relations and as a practical guide to doctors everywhere. One practitioner whose collections had sagged to 65 per cent said the bureau's tips had enabled him to nudge that percentage up to 98.

The bureau summed up its recommended preventive measures thus:

1. Get complete facts on each patient during the first interview: full name, where employed, kind of work, address, telephone number, insurance coverage, and name of spouse.
2. Take time to explain your diagnosis and treatment; avoid overly optimistic prognoses.
3. Bill regularly and itemize all statements.

* * * * *

Conjunctivitis—A. G. Cross—The Practitioner—Oct. '48.

Inflammatory conditions of the conjunctiva occur very commonly in human beings and are due, predominantly, to bacterial and allergic causes. They may appear in acute form or run a long and chronic course. Usually the lesion is isolated, but it may be associated with blepharitis or keratitis, especially if due to a staphylococcal infection. Epidemic kerato-conjunctivitis, probably a virus infection, is also a condition in which the conjunctiva and cornea are affected together. Reiter's disease, in which conjunctivitis, arthritis, and urethritis are associated, is a syndrome of doubtful etiology, for which treatment is difficult.

Treatment. The treatment of bacterial conjunctivitis has been revolutionized by the development of penicillin and of the drugs of the sulphonamide group.

Penicillin drops, made up in a strength of 2,500 oxford units to the cubic centimetre and instilled into the eye every two hours, have a rapidly curative effect on the common forms of conjunctivitis due to the pyogenic cocci, unless the strain is penicillin resistant. Penicillin can also be used in the form of an ointment which may be more convenient. Rapid improvement should occur and the pathological condition should have settled almost completely in three days. It must be emphasized that if penicillin be employed it must be ordered in full dosage, or there is a risk that penicillin-resistant strains may be developed and treatment should continue for some days after clinical cure has occurred, to safeguard possible recurrence. It should also be pointed out that a small proportion of patients are sensitive to penicillin, and that they develop marked irritation of the eye with swelling of the lids when the drug is employed. This must be regarded as an indication for the employment of other treatment.

The sulphonamide group of drugs is also useful in the treatment of conjunctivitis, although there is some controversy regarding the precise indications. There is some evidence that the sulphonamides are most helpful in the virus conjunctival infections, such as trachoma. This, however, is not borne out by the experience of ordinary clinical practice, when the use of these drugs is found to be very useful in the treatment of acute and chronic conjunctivitis due to the common pyogenic organisms. Sodium sulphacetamide drops, 30 per cent., can be used three times daily, and the 15 per cent ointment is useful in cases chronic conjunctivitis when it can be inserted in the eyes at night over long periods. Sulphathiazole ointment and drops may also be useful. These preparations may cause complaints of discomfort from patients when they are instilled in the eyes, but this irritation is not usually a marked feature. The sulphonamide group of drugs taken by mouth or applied locally is useful in the treatment of trachoma. Full dosage by mouth and locally in the early stages, with expression of the follicles, gives satisfactory results and, although a cure cannot be guaranteed, this class of drug offers a better prognosis

than any treatment previously employed for this disease.

Gonococcal ophthalmia has ceased to be a serious problem as a result of the use of penicillin and of the sulphonamide group. Penicillin can be used prophylactically in place of silver nitrate at the time of birth, and is also useful in the established condition, when it can be given locally or systemically. Sulphamezathine, given in an initial dose of 0.25 gm. and subsequently 0.125 gm. in the milk feeds, every four hours until forty-eight hours after clinical cure is most useful in the management of gonococcal ophthalmia. In association with saline irrigations this treatment usually produces cure in three days.

Treatment with these drugs allows bacterial conjunctivitis to be settled much more rapidly than with earlier methods but, when they cannot be obtained, it should always be remembered that frequently repeated irrigations with normal saline will cure the majority of cases of conjunctivitis due to pyogenic infection.

The management of allergic types of conjunctivitis has been made easier by the use of the antihistamine group of drugs. Antistin-Privine is an example, and when used every four hours in such allergic manifestations of the conjunctiva as hay fever, it gives rapid relief; 1 per cent ephedrine drops in normal saline are also useful.

Some cases of conjunctivitis tend to be recurrent and in these the effect of excessive dandruff and of nasopharyngeal infection should always be investigated. Refractive errors have been considered to be a factor in the incidence of chronic conjunctivitis, and they should be looked for, although it is doubtful if they are often of a serious importance.

Conjunctivitis is not a painful disease, and in uncomplicated cases it does not result in deterioration of vision, but it causes discomfort, and requires energetic treatment. Particular care must be taken to ensure that treatment is not stopped too soon, or a recurrence may occur, due to organisms which are resistant to both groups of chemotherapeutic drugs, the treatment of which is neither easy nor satisfactory.

* * * * *

Treatment of Cholera with No. 6257: with success in Tanjore villages—B. M. J. April '48.

Dr. Bhatnagar assisted by three chemists of the St. Xavier's College, Bombay, carried out laboratory and field investigations on a new compound—a condensation product of Cibazol and Formaldehyde. The field investigations were carried out in the Tanjore District during November and December 1947. The patients suffering from cholera in this endemic area were treated in their own homes in villages *only with this drug* and no facilities existed for nursing or other necessary medical care and attention. There was no adjunct treatment for these patients. The survival rate compared very favourably with that obtained by present day recognized therapy.

T. N. S. R.

Transfusion Malaria and its prevention by Quinine.

Drs. J. H. Chen and Y. K. Wu, writing in the Chinese Medical Journal, Shanghai, report their findings based on 233 blood transfusions performed in the Chungking General Hospital. The blood was given to the patients immediately after withdrawal from suitable donors, whose past history of malaria alone was not in most cases reliable. 113 patients were given transfusions *without* Quinine prophylaxis. 21 of these developed Malaria and only 5 of these 21 had a history of past malaria. The Hospital is in an endemic malarial zone. The second group of 120 patients were given Quinine 0.3 gramme four times a day for 5 to 7 days by mouth, as soon as possible after the transfusion. None of these developed Malaria in hospital. The authors recommend the routine

use of Quinine after blood transfusion in all endemic areas.

T. N. S. R.

Epileptic persons are unsafe drivers.

Dr. Wartenberg of San Francisco refers to the law in force in California, which requires that Epilepsy (lapses of consciousness which may become chronic) be reported by the attending physician to the State Board of Health. The Epileptic driver is thus discovered and the license is revoked. A similar law occurs in the States of Oregon, Indiana and Wisconsin. He pleads for introducing such a law and enforcing it in all the States.

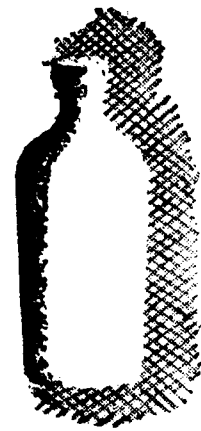
A suitable enactment by the Central Government is most essential for the whole of the Indian Dominion—whereby Epileptics, persons liable to fits of giddiness, and persons with high blood pressure and other diseases which produce sudden lapse of consciousness should be forbidden from driving cars and buses, and refused licenses for driving.

T. N. S. R.

The design of Bed pans—B. M. J. May '48—A doctor who had been wounded wrote to the British Medical Journal about the Bed pan during the war.

He pointed out that the bed pan hinders defecation by pressing the buttocks together. The lavatory seat, on the other hand helps it by separating them and putting the anus on the stretch. A bed pan of a shape approximating to the lavatory seat might be clumsy for the nurses, but it would greatly reduce the discomfort of our patients enough to be worth the extra trouble involved. The same view has since been expressed in the B. M. J. by other doctors also.

T. N. S. R.



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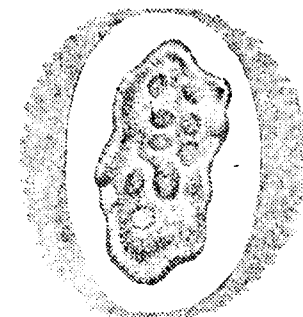
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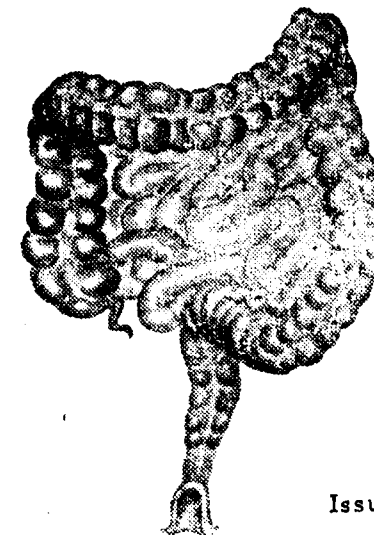
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.. ..

Lectures on Oral Cancer in Illionois were transmitted to groups of Physicians by telephone.

.. ..

In England, where cloth rationing is stringent, practitioners entering practice can obtain special certificates for upto six gowns or coat overalls.

.. ..

Two new medical films produced in U. S. A. are on 'The Story of Menstruation' and on 'The Physiology of Normal Menstruation.'

.. ..

The doctor was applying a light bandage over the vaccinated arm.

"Put it on the other arm" said the boy.

"No, this is just to prevent the boys in the school from hurting the wound" suggested the doctor.

"It is for that reason I want the bandage over the other arm" insisted the boy.

.. ..

A lady consulted her friend, "My son has swallowed a gold piece. They want us to take him to the surgeon in the hospital. Can he be trusted?"

"Oh, absolutely," replied the friend. "I think he is quite a honest man."

.. ..

Judge (to plaintiff in compensation claim): "Now show the court the effects of the accident upon you."

The plaintiff got up and with infinite pain, hobbled across the floor.

Judge: "And now, to show the court the awful result of that accident show us how you used to move before the accident."

Plaintiff thereupon took a hop, skip and jump across the court.

.. ..

"My sister is marrying a doctor, you know?"

"Does he have much money?"

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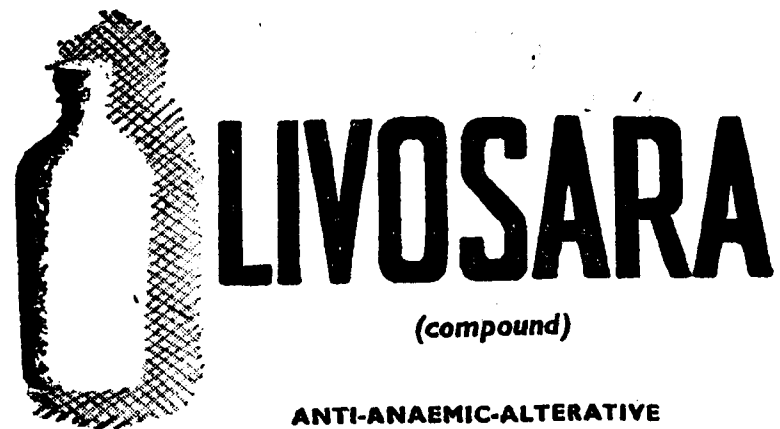
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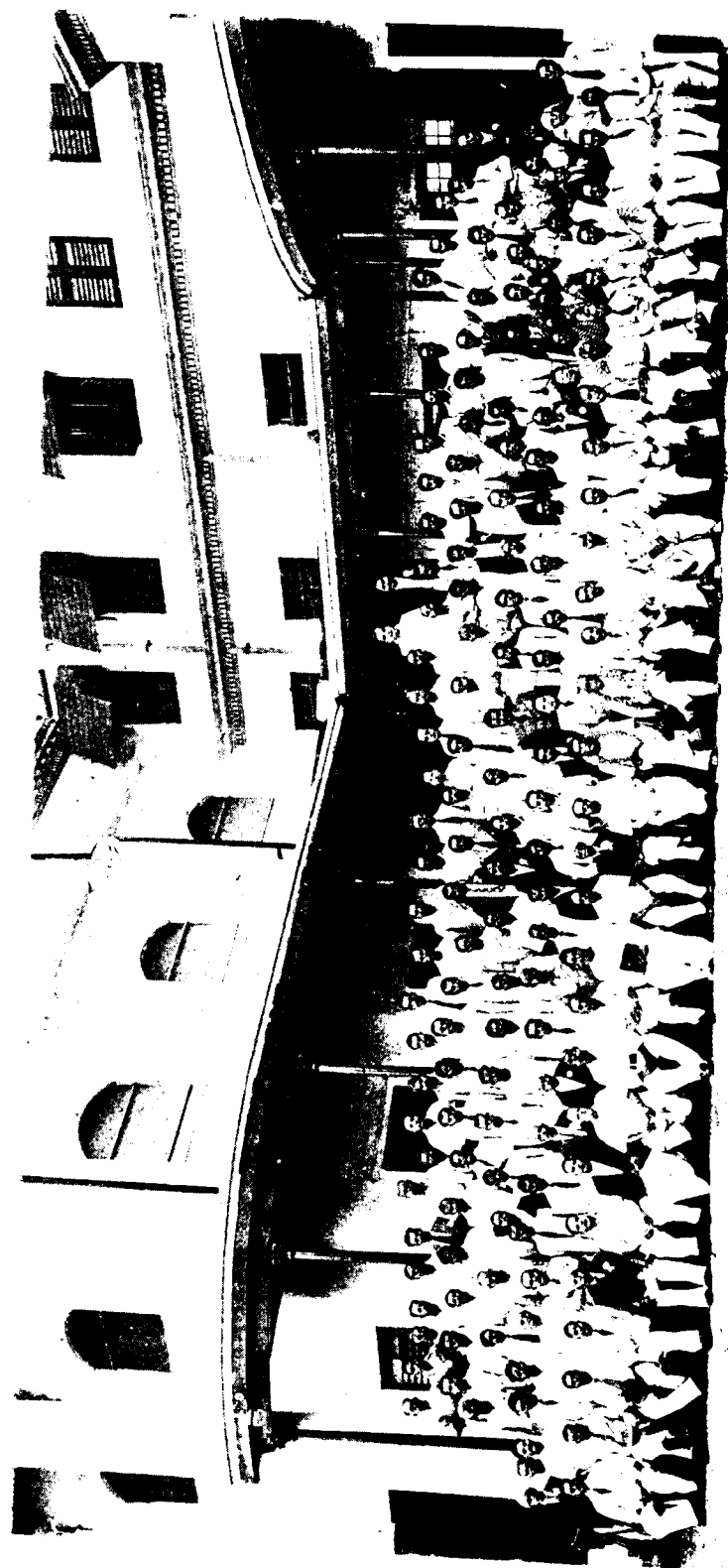
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Group Photo taken at the Third South Indian Medical Conference at Madras in October 1948

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THE MISCELLANY

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[No. 8

B. C. G. VACCINATION INAUGURATION: MADRAS 15-2-'49

ADDRESS BY

HIS EXCELLENCY THE MAHARAJAH OF BHAVANAGAR,
The Governor of Madras

MR. PRESIDENT, LADIES AND GENTLEMEN,

I am very thankful to you all for inviting me today to inaugurate this B. C. G. Campaign. It is a matter of great interest to me, because I have always held that public health schemes should be given one of the first priorities in our country today. We attained independence but we have a great deal to do to raise the standard of life of the common man and in this task, one of the first planks should be our fight against the great diseases which take such a heavy toll of our people. The problem of Tuberculosis in our country is a vast one. We are told by authorities on the subject, that a modest estimate of deaths from Tuberculosis will be more than 5,00,000 per year and further that five times that number are suffering from this terrible disease.

Public Health of course is, in its primary aspect, a social and economic problem. Until every family in the country is assured of a much better standard of life we cannot really hope to stem the tide of these diseases effectively. Improvement in nutrition, housing, facilities for recreation and better living conditions are all very necessary to diminish the ravages not merely of Tuberculosis but of many other diseases. In this aspect, increased food production, better housing conditions, better sanitation etc., are all of primary importance. But it will take some years before substantial progress in this direction could be achieved. Meanwhile we should do everything in our power to lessen the ravages of such diseases. And Tuberculosis being an infectious disease, the Government of India and this Government have decided to introduce similar measures into our public health programme as are taken against other infectious diseases. It is with this object that these Governments have decided to launch this scheme of B. C. G. Campaign against Tuberculosis and we are making now a beginning in this City.

The Government of India are being helped in this programme of B. C. G. vaccination by the World Health Association, the United Nations International Children's Emergency Fund and the Danish Red Cross. These organisations have had a great deal of experience in recent years of this scheme, and these

measures are being utilised in several parts of the world. I am not a medical man myself but I understand this scheme of B. C. G. vaccination is one of the most useful weapons to apply in a public health programme amidst a population where the death rate from Tuberculosis is very high, and where other resources for increasing the general resistance of the individual are still inadequate.

I would like here to dispel whatever misunderstanding there is on this subject by saying that B. C. G. vaccination is only one item in a comprehensive scheme of Tuberculosis control. The Tuberculosis Association in Madras have recently appointed a sub-committee and these have drawn up a practical scheme of Tuberculosis control for the City with provision for more clinics, more beds, financial assistance to the poor victims of this disease etc. This Presidency has already a very fine record in anti-Tuberculosis work. We have a number of Sanatoria in this Province which are some of the best in India and which attract patients from all over the country. We have a Tuberculosis Association which is actively interested in this work and I would like to pay a tribute here to its Honorary Secretary, Dr. Vasudeva Rao whose untiring energy should be a source of inspiration to us all. The inauguration of this B. C. G. Campaign marks another definite stage in our fight against Tuberculosis and in the whole public health campaign against disease and death, which our Governments are now waging and let us pray that it may be attended with every success.

Address delivered by the Hon. Sri A. B. Shetty, M.L.A., Minister for Public Health, Govt. of Madras, at the inauguration of B. C. G. Vaccination campaign, by His Excellency the Maharaja of Bhavanagar Governor of Madras on 15-2-'49 at the Medical College, Madras.

We are thankful to His Excellency the Maharaja of Bhavanagar for inaugurating this campaign with a speech full of sweet reasoning pointing out the magnitude of tuberculosis problem in this country, the need for combating its spread and the object of the Government of India and this Government in launching this campaign of B. C. G. vaccination as a part of comprehensive scheme of tuberculosis control. The Government of India have carefully considered the question in all its aspects and have come to the conclusion that mass vaccination with B. C. G. will be a cheap and effective method of reducing the incidence of tuberculosis which is assuming epidemic proportions in this country. They have entered into an agreement with foreign health organisations for aid in this work. A special laboratory has been put up at the King Institute, Guindy, for the preparation of B. C. G. vaccine with the help of an expert from the World Health Organisation. Two of our men who have been given training in the technique of preparing the vaccine at the State Serum Institute, Copenhagen, are in charge of this work. In June 1948 Dr. Gellner of the world Health Organisation arrived here. In August, the Hon'ble Srimathi Rajakumari Amrit Kaur inaugurated the B. C. G. programme at Madanappalle. This scheme is being worked in close association with the Union Mission Tuberculosis Sanatorium. The latest available figures received from Madanappalle show that 4723 persons have been tuberculin tested. The negative reactors among them were 1818 persons and of these 1735 have been given inoculations. The

majority of the tested and inoculated persons are school and college students. Dr. Frimodt-Moller, Medical Superintendent of the Sanatorium at Madanapalle has been good enough to send useful information regarding the B. C. G. vaccination work so far done at that place. This doctor invites persons who are genuinely interested in this scheme to inspect the records of the work done at Madanappalle where no adverse reactions to this vaccination have so far been noticed in any case.

One of the six foreign teams are being sent to this country. One of these has recently come to Madras to train local teams for this work and we are to-day inaugurating this campaign with their kind assistance. On the eve of this campaign, Sri A. V. Raman, the Editor of "Peoples Health" has launched with his usual crusading zeal a campaign against the action which Government are taking in this matter. Two of the Madras doctors have in this morning's Indian Express published a joint statement to strengthen Sri Raman in the stand taken by him. No such warning to the Government was given by these doctors when the B. C. G. programme was started at Madanappalle six months ago. What has happened in the meantime to wake them up to the dangers of the B. C. G. vaccine, is not known. Like Brutus, they are no doubt honourable men and they must have good reasons for coming forward now with their advice to the public. My friend Sri A. V. Raman is a hot gospeller on behalf of environmental hygiene. This idea gives him no rest and he will give no rest to the Ministry of Health at the Centre as well as in this Province until it is implemented in practice. His crusade against the B. C. G. programme starts from this idea. It is well-intentioned, but it has created a scare in the minds of newspaper readers including even intelligent people, as is evident from the pronouncement of one of our elder statesmen who is well-known for his sober and balanced views. Government have to face all kinds of opposition to the measures they introduce, whether it be Zamindari abolition, Religious Endowments Bill or B. C. G. vaccination. There are critics and critics. Some like Bernard Shaw are all antipathies. They are against everything from the Government of the Universe to the size of our collars and the shape of our boots. The Satyagraha doctrine of Gandhiji is being misunderstood and misapplied. Thank God, no one has so far started fasting as a protest against the B. C. G. campaign. It is impossible in the nature of things to have unanimity of opinion on any subject. One need not ransack the literature on B. C. G. to find out that "Doctors differ". There can be no cent percent surety about the efficacy or safety of any preventive inoculation. Eminent authorities can be quoted about the danger and futility of vaccination against small pox. Nature-cure enthusiasts are against the use of all drugs in any form.

B. C. G. vaccination will be done on a purely voluntary basis. The consent of parents is to be obtained for inoculating students. This method of vaccination has passed the stage of experiment. Experience lasting over 20 years has accumulated evidence in its favour. There is authoritative world opinion to say that it is quite safe and it gives a high degree of protection for five to six years and even more. Transactions of the Commonwealth and Empire Tuberculosis Conference held in London in July 1947 and of the First International Congress on B. C. G. held at Paris in June 1948 have testified to a mass of practical objective evidence of the safety of B. C. G. vaccination and of a significant degree of its efficacy as a result of the study of more than 10 millions of vaccination effected in the whole world during the last 25 years.

The rigid controls that have been imposed on the manufacture of B. C. G. vaccine in our country by the Government of India can be taken as a sufficient guarantee that proper material is being used in the present campaign. The Government of India has had the advice of official and non-official medical experts at every stage of the programme which has been planned. It is not fair to the Government or to its technical advisers to suggest that they have thoughtlessly played into the hands of foreigners wishing to try an experiment and using our boys and girls as guinea pigs. Our country requires this particular method of tuberculosis control more than the healthier countries of the West and we must be grateful to the organisations in distant parts of the world for the help they are giving us with their expert advice. Even in countries where environmental services have been established on a large scale, this method of artificially increasing resistance or immunity is being more and more utilised in areas where people suffer massive exposure to infection. The younger age groups are more liable to infection and therefore it is desirable that in the first instance students should be protected by this method of inoculation. So also it is particularly necessary in the cases of nurses, mill workers and others who are more exposed to infection.

No one disputes that improvement of living conditions is the primary requisite for raising the standard of public health. It will take a long long time for us to establish environmental services on the required scale. We have in the meantime to use other weapons in our armoury to fight against tuberculosis. B. C. G. vaccination is only one item of the anti-tuberculosis programme. Clinics, hospitals, sanatoria, after-care colonies and education of the people to impress on them the need for early detection, isolation and treatment form essential parts of the comprehensive tuberculosis control scheme which has to be implemented. The Sanatoria at Tambaram, Madanappalle and Perundurai have been complimented as three of the finest institutions of their kind in our country. Steps are being taken to increase the number of beds at these sanatoria and to open more institutions for the treatment and care of tuberculosis patients in other centres of this province. It must be our aim and endeavour to see that in the planning and working of a many-sided tuberculosis control programme, Madras gives a lead to the rest of India as it has done in several other matters.

We beg to announce the sad demise of the following doctors:—

1. CAPT. S. THAMBIAH of Madras
2. DR. H. M. RAO of Madras
3. DR. T. S. VENKATARAMAN of Madura
4. DR. T. P. BALAJI of Madura
5. DR. P. ANANDA RAO of Mangalore

February, 1949]

B. C. G. VACCINATION

BY

DR. K. VASUDEVA RAO, M.D., T.D.D.,
Superintendent, Tuberculosis Hospital, Madras

In a country with the number of tuberculosis beds about a hundredth of what it should be on the basis of one tuberculosis bed for every death per annum from this disease, one has necessarily to look round for measures that may be effective in protecting the individual against TB. We quite realise that the ideal method is to comb the country for all patients with TB bacilli in the sputum, to isolate them and to increase the general powers of resistance of the masses of our people by proper attention to their environment and nutrition. But in view of the inevitable delay in achieving the ideal conditions, it is decided to introduce a method of control by vaccination.

Studies have shown that in any urban population in India more than 80% of the healthy adult members have been infected with TB bacilli present in their natural surroundings. This is revealed by a simple test performed in the skin, known as the tuberculin test. This large number of persons in the community although showing such evidence of familiarity with the tubercle bacilli certainly do not present clinical features of the disease known as TB, such as cough, spitting of blood, fever, loss of weight or the evidence obtainable in an x-ray picture. The number of persons showing such symptoms of disease will be 2% or less of the general population even in a country with such high incidence of the disease as ours. So the first thing to understand is that infection with TB bacilli is entirely different from the disease known as TB. This means that of those who survive the initial or primary infection with tubercle bacilli, only a very small minority show the evidence of disease in later life. Mark the words "of those who survive the initial infection", which implies that a number of children do not survive the primary tuberculous infection. It is believed that quite a number of very young children reported to have died of broncho-pneumonia, fevers and convulsions have actually succumbed to a primary infection and really died of miliary tuberculosis or tuberculous meningitis. As pointed out above, most of those that acquire the infection develop immunity and escape the actual disease. However, if the infection were with a virulent strain of the bacilli and with an uncontrolled dose of the organism as frequently occurs in natural infection, a person may die before he can develop immunity to the disease.

The very basis of the B. C. G. vaccine: B. C. G. standing for the Bacillus of Calmette and Guérin, who did all the research on the subject, is employed to achieve the good effects of primary infection without the dangers inherent in uncontrolled massive and frequent dosage with a highly virulent TB bacilli.

Suffice it to say that we attempt to increase the specific resistance of the host to tubercle bacilli by vaccinating him with a very small, non-virulent dose of tubercle bacilli. The bovine variety is the one used in this method of manufacture of the bacillus of Calmette and Guérin, B. C. G. for short.

The production of such immunity by the inoculation of the derivatives from the specific causative agent is already well known to all of you in the case of small-pox, plague, cholera, etc.

Yet another question that may be raised is the duration of the effectiveness of the protection given by B. C. G. vaccination, that is, does a person who becomes Tuberculin positive as a result of the B. C. G. vaccination remain positive for the rest of his life? By most workers in this field it is believed that the immunity usually lasts for about five years. After that a positive reaction may be the result of a natural infection acquired during the five years. In any case, it will be wise to repeat the Tuberculin test at the end of five years and revaccinate all those giving a negative reaction thereby indicating that their immunity is lost.

The following points with regard to the vaccine that is to be used in this campaign have got to be stressed:—

(1) The vaccine is of no value in curing a case of an established disease, it has no place in the treatment of a patient actually suffering from any form of TB.

(2) More than 10 million inoculations have been carried out all over the world during the last 28 years and not a single case of disease caused by the bovine strain of the bacillus which is used in the preparation of the vaccine has been demonstrated.

(3) It is not necessary to administer the vaccine to persons already infected with the TB bacilli revealed by a positive Tuberculin test. Therefore, a preliminary Tuberculin test always preceded B. C. G. vaccination in any individual except infants at birth and only those who react negatively are administered the vaccine. If a person has been known to be exposed to natural TB infection quite recently, he may take a further six weeks or so to show a positive skin reaction. Such a person is also not vaccinated until a test at the end of this period shows a negative reaction. There is really no harm in an already infected person receiving an extra dose through the BCG vaccine, but the BCG vaccine is withheld under the above circumstances, as otherwise disease developing later as a result of the natural infection may be wrongly attributed to the vaccine and the entire scheme brought into discredit.

(4) The Government of India are aware that the preparation of the vaccine in such a way that it will be sufficiently potent to produce an immunity response and yet be absolutely innocuous requires a special technique and careful control. They have therefore restricted its production to a single laboratory at the King Institute, Guindy, by a specialist specially trained in this work in Europe. The original strain of the bovine tubercle bacilli provided by the Pasteur Institute, Paris, and used with such remarkable safety all over the world is the one used in our laboratory also.

(5) The utility of the vaccine in controlling the incidence of the disease TB, which means also the diminution of the deaths from the disease has been proved in several controlled studies in which half of a particular group was vaccinated and the other half was left unvaccinated to serve as controls. A careful analysis of the large number of such studies that are available in the literature on the subject, would show that the incidence of TB disease and the risk of death from TB are both reduced to 1/6th or 1/7th of what might have been anticipated without the protective vaccination.

(6) By decreasing the incidence of TB cases, the number of open cases which act as centres for spread of infection would be greatly reduced. It is a very great gain in the Public Health control of the disease. The effects of this could be seen well within a decade.

From all that has been said above, it will be realised that the Government of India has taken the advice of leading experts in this subject both in India and outside and planned the entire scheme with the greatest sense of responsibility and the desire to effectively and quickly control the spread of TB in India.

The vaccination is entirely optional and there is no question of compelling any one to take it. The parent of every minor child will be given a good opportunity of refusing vaccination for his child if he does not want it. But the safety of the vaccine as against the great risk of naturally acquired TB infection, the total absence of untoward reactions as a result of the vaccination and the rigid controls imposed on its production should sufficiently guarantee to the public that the scheme is being worked in their best interest.

BCG is not the only weapon with which TB is to be fought. Other well known methods of TB control such as the improvements of nutrition, better housing and education of public still remain important.

The application of particular methods of control must, however, vary from place to place and briefly, the choice of the methods has been described as follows by Prof. C. A. Winslow of the Yale University, who is also the Editor of the American Journal of Public Health:—

(1) In places with high death rates, that is, about 200 per 100,000 of the population as in most of our cities in India, and where the resources for increasing the general resistance of the population as well as for the isolation of the open cases are poor (and this description also applies to every province in India) BCG vaccination is the most useful weapon to employ.

(2) In places with a lower death rate contact survey, that is, a thorough examination of every person exposed to an open case of TB in order to detect the earliest evidence of disease, is likely to yield the maximum results.

(3) With a further improvement in death rate, x-raying of selected groups, who are anticipated to have the largest incidence of the disease will be the method of choice.

(4) When the death rate is quite low, that is, about 40 per 100,000 as in most parts of the U.S.A., mass miniature radiography, that is, universal x-raying will give the largest dividends.

(5) When the disease is actually rare, universal tuberculin testing alone may suffice in as much as it will reveal the sources producing a positive tuberculin reaction and perhaps in this group the mere raising of the non-specific factors of resistance may be enough. But it is just in this group that BCG vaccination has been extensively employed in the Scandinavian countries in order to create hard immunity. This has been done because these countries will practically be virgin soil as the chances of persons acquiring a positive tuberculin reaction by natural infection have become so remote and the introduction of a few open cases into the community may start an epidemic of TB. Actually, therefore, BCG is valuable at either end of the scale depicted by the five groups considered above. And, conditions in India being as they are, BCG is expected to yield quicker and more gratifying results than certain other methods of TB control such as contact surveys and mass miniature radiography. It should, however, be again reiterated that procedures such as segregation of the known open case and the improvement of the living conditions and nutrition of the masses have to be persisted with and indeed intensified.

Having thus shown you the basic principles of B. C. G. inoculation, I proceed to give the programme for the city of Madras. It is first intended to inoculate the medical students and nurses and other hospital personnel, college students, high school students, elementary school students, new-born children, groups of workers in factories like the B & C Mills and other firms. Later the house to house inoculation will be undertaken. Since, as pointed above, the vaccination is voluntary, the persons who refuse the vaccination in the above groups will naturally serve as controls. The progress of these groups will be followed. A time will come, when it will be considered as cruel, to deny the good effects of vaccination to any set of people who need it. I would conclude my remarks by quoting the very last sentence in a textbook on Tuberculosis written by Francis Marion Pottenger, which was published towards the end of 1948, which reads as follows:—

“Vaccination has an immunological basis. It is logical. It is harmless. It is effective. It is now time that BCG be used in the protection of the exposed, the same as mass tuberculin testing and mass x-raying are used in finding the infected.”



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February, 1949]

B. C. G. AND CONTROL OF TUBERCULOSIS

BY

DR. R. SUBRAMANIAM, D.M. & S., T.D.D.

and

DR. T. M. KRISHNAMURTHY, D.M. & S., T.D.D.,

Rajaji Tuberculosis Sanatorium, Tiruchirapalli.

B. C. G. Vaccination Campaign was inaugurated in India recently by the Hon'ble Rajkumari Amritkaur, our Health Minister at Madanapalle. Since then many people are anxious to know what this B. C. G. is and how it helps in Tuberculosis Control. Many people seem to think that B. C. G. is a curative drug.

Our object in writing this paper is to give an idea of what this vaccine is, and how it is used.

It must first be understood that B. C. G. is a *Preventive* vaccination and not a curative measure. Many attempts have been made from time to time to find out a specific means of preventing and curing Tuberculosis. Among these, B. C. G. is now receiving a wide application as a preventive vaccine and streptomycin as an antibiotic drug for curative purposes in certain cases.

B. C. G. (Bacillus-Calmettee-Guerin) This is a preparation consisting of living cultures of Bovine tubercle bacilli which have undergone marked attenuation after prolonged cultivation on a glycerol oxbile medium. By this attenuation the bacilli are made to lose their power to cause progressive tuberculous lesions in the Guinea pigs.

The vaccine thus prepared is given to individuals negative to Tuberculin test (like Mantoux). It must clearly be understood that since a positive reaction to Tuberculin test indicates that a person has had already a primary tuberculous infection and that his body has acquired a certain degree of immunity, such a person does not derive any benefit from vaccination with B. C. G. Hence B. C. G. is given only to those who are negative to

Tuberculin tests. Tuberculin test is negative in some people who are very weak and have no resistance even though there may have an active tuberculous focus in them. These people are said to be in a state of anergy.

Method of application of Tuberculin:— Originally Calmettee advocated the use of oral method of administration of the vaccine. This was later replaced by the intracutaneous route as it is found that the reactors by this method were of a higher percentage than the former method. However the local reaction following the injection were:—Ulcerations which may persist for months, focal abscesses and suppuration of Lymph nodes. To avoid these complications, scarification method is now employed by many. The technique is as follows:—

“A drop of vaccine is placed on the outer aspect of the alcohol-cleansed arm. A sewing type needle, similar to the one used for vaccinia, is held between the thumb and the index finger about 1.5 cm. from the point. The thumb and needle should form a continuous line. With the shaft of the needle held tangentially to the skin, the vaccine is spread in linear fashion for a distance of 2.5 cm. By a downward pressure, exerted to a large extent by the thumb, the skin is pierced with the needle point through the vaccine. Following this downstroke which engages the point of the needle into the skin, an upward movement is exercised without disengaging the needle. The point of the needle remains buried in the skin on the upstroke. The precaution makes the method foolproof. The punctures are placed about 2 to 4 mm apart and ten punctures are made in a line. The vaccine is spread to the

second line parallel to the first and 4 to 6 mm away. These three lines of ten punctures each are made in an area of approximately 2.5 by 1.5 cm. The vaccine is allowed to dry on the arm; no blotting or covering with dressings is practiced. Wetting of the arm should be avoided for twentyfour hours.

The introduction of B. C. G. into the body initiates a benign infection which in turn sets up defenses against the disease inducing an artificial immunity of varying degree and for varying periods of time. Since introduction of this vaccine sets up a low grade tuberculous infection, the method is not entirely devoid of danger, not to mention possible accidental contamination of the medium as occurred in Lubeck tragedy. The American Trudeau Society recommends the use of B. C. G. in the following more vulnerable groups of individuals provided they do not react to adequate tuberculin tests.

1. Doctors, medical students and nurses who are exposed to infectious tuberculosis.

2. All hospital and Laboratory personnel whose work exposes them to contact with the bacillus of tuberculosis.

3. Individuals who are unavoidably exposed to infectious tuberculosis in the home.

4. Patients and employees of mental hospitals, prisons and other custodial institutions in whom the incidence of tuberculosis is known to be high.

5. Children and certain adults considered to have inferior resistance and living in communities in which the tuberculosis mortality is unusually high.

In giving the vaccine to children, care should be taken to avoid administering it to very weak and debilitated children as any hazard happening to the child later is liable to be attributed to the vaccination.

The Society does not recommend vaccination of the general population

except for carefully controlled programmes.

B. C. G. vaccination affords only incomplete rather than absolute protection which should be the aim in tuberculosis control. So, in addition to B. C. G. we should concentrate our attention also (a) in improving the living conditions and general health of population, (b) in reducing tuberculous infection by modern public health methods and also by searching for patients among apparently healthy individuals by means of mass radiography etc., (c) in doing prompt and adequate treatment for patients with active disease, (d) in segregating those active cases which cannot be cured and (e) in providing proper methods of rehabilitation of people who were successfully treated.

CONCLUSION:—It seems clear that, if rigidly supervised, B. C. G., has a place in anti-tuberculosis work. It raises the threshold of infectability in the vaccinated so that nurses, attendants and other exposed to tuberculous infection are better protected than the unvaccinated. There may be a limited and temporary use in badly contaminated areas, to protect infants and young adults against infection.

Indiscriminate use of the vaccine should be avoided. It may develop a false sense of security so that lay people and physicians may rely too much on it and not on other public health methods.

Tuberculin testing is a valuable aid in diagnosing non Tuberculous diseases as a negative Tuberculin reaction definitely rules out presence of Tuberculous infection in the individual. As such it is not advisable to create artificially positive Tuberculin reactions when it is not absolutely necessary.

Reference

- Diseases of the chest:—By Eli H. Rubin.
The American Review of Tuberculosis—Vol. LVII. No. 1.
The Journal of the American Medical Association Vol. 136 No. 2.

February, 1949]

B. C. G. VACCINATION

DR. P. A. S. RAGHAVAN Z.M.R.E. (University of Vienna)

The inauguration of the B. C. G. Vaccination campaign in Madras has raised a storm in the Tea cup and probably we would be hearing a lot more.

The opposition to this scheme is from two points of view, one is led by Sri A. V. Raman and others who think alike with him. They believe that with the spread of its popularity other measures to combat tuberculosis, such as improving the environmental hygiene, better living conditions, and other sanitary measures including supply of good drinking water, drainage schemes etc., would be relegated to the back ground. This is an unfounded fear. In spite of compulsory vaccination against small pox, and voluntary protection against cholera, typhoid and other diseases, the Government and Local bodies have not given up other measures to improve the health conditions of the people. Another argument of theirs is that when the health conditions improve to an ideal state, the vaccination may be taken up. When people can live in such ideal conditions and lead healthy lives, there is no need to protect them. It is enough if foreigners coming into the country bring proofs of such protection, just as now foreign visitors are obliged to bring with them certificates of vaccination against various diseases such as cholera, plague, yellow fever, typhoid etc. It is only in countries where such ideal conditions do not exist that protection by such methods like vaccination are very necessary. England where vaccination against small pox was compulsory till recently has given it up because health conditions have improved to such a degree that small pox has become a rarity.

The other point of view to the opposition is from some medical men who hold that this vaccination is still in the experimental stage and that attenuation of the living bacilli cannot be depended upon and that therefore it is dangerous to carry out this experiment in this country.

The Hon. A. B. Shetty, Minister for Public Health, and Dr. K. Vasudeva Rao and Dr. Benjamin quoted authorities and statistics on the 15th February, when the vaccination campaign was inaugurated by his Highness the Maharaj of Bhavanagar, the Governor, that the stage of experiment has passed and that this vaccination has proved to be a definite factor against infection. Assuming that it is still in the stage of experiment, why should not this vast country also carry out this experiment and give its results to the world at large. Why should India, Independent India, not contribute its quota for World knowledge? Should this country still wait for results from other countries to tackle such colossal problems. Moreover, in these matters there is no finality; for, even when a large majority accept certain principles there will always be a minority against it. Though inoculation against small pox is an accepted theory are there not still conscientious objectors and disbelievers in the theory itself?

Regarding the objection that attenuation of the bacilli even after 15 or 20 years cannot be relied upon to be innocuous, is more theoretical than real. There has not been any reports upto date about the harmful effects of this vaccination. To further prove the harmlessness of living bacilli being

injected, reference may be made to the experiments carried on in Vienna in 1937 and 38, by Prof. Kutchera, who injected unattenuated living cultures of human tubercle bacilli, *not even bovine*, with very good results. His idea started with the finding that accidental infection of the skin with tubercle, by those suffering from tuberculosis of the lungs and larynx, cured these conditions with the development of the skin tuberculoids. These

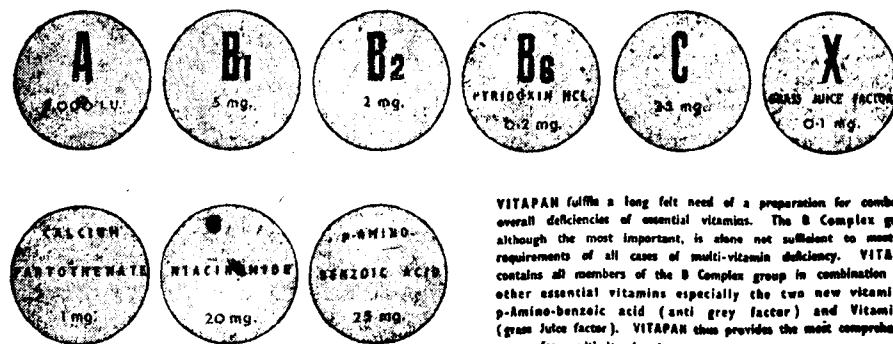
later could be easily cured. He started with small doses of less than a million and was recording very encouraging results. The second World war came in soon after and it is not known what happened to Prof. Kutchera and his experiments. While a decade back, vaccination with living bacilli were being tried as a curative measure, it is surprising that we should fight shy even to try it as a preventive measure in the year of grace 1949.

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February, 1949]

ABSTRACTS FROM THE CURRENT MEDICAL LITERATURE

THE ADMINISTRATION OF SODIUM SALICYLATE—*The Clinical Journal*, Jan., Feb., 1949.

The value of salicylates properly administered in the treatment of rheumatic fever has recently been proved. The important point is to keep up the concentration of the drug in the plasma. A study of factors under the control of the clinician which influence plasma concentrations of salicylate after the administration of sodium salicylate was made by W. A. Parker in patients suffering from rheumatic fever and rheumatoid arthritis, and in convalescents. Although maximal plasma concentrations occurred two hours after oral administration, 4 hourly dosage maintained plasma levels successfully. A relation between dose and body-weight in adults was shown. A low fluid intake increased plasma concentration of salicylate when a fixed daily dose of sodium salicylate was continued. After such a rise the resumption of adequate fluid intake speedily diminishes plasma concentrations. There was a reduction of 10 per cent. in salicylate content of mixtures of sodium salicylate and sodium bicarbonate after standing for 3 weeks. Inadequate shaking of such mixtures before administration caused the salicylate content of a dose to vary from 70 to 120 per cent. of the expected amount. Maximal plasma concentrations followed eight hours after rectal administration of sodium salicylate, but the addition of alkali diminished absorption of the drug from the rectum. Satisfactory plasma levels and therapeutic response was shown in two cases of rheumatic fever treated by the rectal route throughout the illness. Plasma concentrations obtained by oral and intravenous administration of sodium salicylate were compared, and no advantage was found in the intravenous administration of sodium salicylate. In the presence of an adequate fluid intake it appears that adults require about 18 gr. of sodium salicylate daily per stone of body-weight to produce and maintain a plasma concentration of 35 mg. per 100 c.c., and that this should be given in 4-hourly divided doses by the mouth. If sodium bicarbonate is given concurrently in equal quantities, an increase in dosage of sodium salicylate

from 1 to 2 gr. per stone of body-weight will be required. The concurrent administration of ammonium chloride or para-amino-benzoic acid will cause a rise in plasma concentration. Rectal enemas of sodium salicylate if given at 8-hourly intervals will maintain satisfactory plasma concentrations and can be used in the treatment of rheumatic fever over long periods. There is no advantage to be gained by intravenous administration of sodium salicylate. Fluid intake should be maintained above 3 pints per diem, as a lower intake over several days will cause sudden and marked increase in plasma concentration of salicylate. Fluid and alkali should be given in salicylate poisoning to facilitate excretion of the drug. Fluctuation in pH of the urine may explain some variation in plasma levels from day to day in patients receiving a fixed dose of the drug. With prolonged administration of sodium salicylate increasing doses will be required to maintain initial plasma concentrations. To ensure accuracy of dosage, sodium salicylate should be freshly dispensed if dissolved in water, and sodium bicarbonate if given, should be dispensed separately.

SALICYLATE THERAPY IN RHEUMATIC FEVER—*The Journal of the American Medical Association*, Oct. 2, 48.

To effect a cure of rheumatic fever, Coburn claims, one or two objectives must be realized. Either the immune response of the host must be modified so that the patient recovers promptly after his first attack or the capacity of the infected micro-organism to elaborate antigen must be inhibited by a chemotherapeutic agent. Since neither of these objectives has yet been realized, one is limited to the suppression of the inflammatory reaction. If salicylate therapy can modify the sterile inflammatory reaction which occurs during activity of the rheumatic process, one might expect this effect to inhibit the development of cardiac disease.

Evaluation of any form of therapy in rheumatic fever, Coburn states, is difficult because about 20 per cent. of young adults may be expected to have a monocytic attack and recover spontaneously under

symptomatic treatment. About 40 per cent of 43 young adults treated with daily doses of 3 to 6 Gm. of sodium salicylate manifested rheumatic activity for more than one month and showed a definite tendency to contract valvular heart disease, while all of 18 patients treated with daily doses of 10 Gm. or more of sodium salicylate either orally or intravenously showed rapid clinical recovery and progressive fall in the blood sedimentation rate. Although half of the 18 patients had electrocardiographic evidence of carditis on admission in none did clinical signs of valvular heart disease develop.

By the method of determination of plasma salicylate concentration, developed by Brodie, Udenfriend and Coburn, it was found that with the institution of daily oral doses of 10 Gm. of sodium salicylate the plasma level rose in forty-eight hours to between 331 and 454 micrograms per cubic centimeter, with an average maintenance level of 368 micrograms. At this plasma level the sedimentation rate of each patient fell within six days and continued to fall progressively to normal so long as this level was maintained. The induction of a high plasma salicylate level was followed not only by a rapid progressive fall in the blood sedimentation rate but also by a marked and rapid improvement in the clinical appearance.

Twenty patients maintained at 359 to 400 micrograms per cubic centimeter manifested a prompt and progressive subsidence of rheumatic inflammation, while 20 other patients with plasma levels below 250 micrograms per cubic centimeter continued to manifest an active inflammatory process. The intravenous administration of sodium salicylate is required to obtain a rapid rise in the plasma concentration of salicylate to 400 micrograms per cubic centimeter. In none of the 38 rheumatic patients treated with 10 Gm. of sodium salicylate daily did valvular heart disease develop, and in 21 out of 63 similar cases in which only small doses of sodium salicylate were given physical signs of heart disease developed. Coburn feels that a plasma salicylate level at least 350 micrograms per cubic centimeter may be required to suppress the rheumatic reaction and that plasma level below 200 micrograms per cubic centimeter may be sufficient to

relieve symptoms while masking a progressive inflammatory process.

Reid treated patients having rheumatic fever with sodium salicylate orally and found that when the average plasma level concentration was less than 20 mg. per hundred cubic centimeters the erythrocyte sedimentation rate showed no signs of falling; when the level was between 20 and 30 mg. per hundred cubic centimeters a slow fall was observed; when it was between 30 and 40 mg. the rate rapidly returned to normal. He argues that if the erythrocyte sedimentation rate can be accepted as a reliable index of rheumatic activity, then sodium salicylate has a curative action in the disease directly related to the plasma concentration of the drug. This conclusion is strongly supported by the observation that recurrence of the disease during oral treatment with salicylate level and subsequent remission with a secondary rise in the plasma level of the drug. It appears therefore that the practical problem in the treatment of rheumatic fever is to know when enough salicylate is being given.

Reid concludes that effective treatment of rheumatic fever with salicylate demands that dosage should be controlled by repeated estimations of plasma or urinary salicylate. Cure of the disease depends not only on reaching but also on maintaining a high plasma salicylate level.

While salicylate is probably not the final solution to the therapeutic problems of rheumatic fever, with the development of blood level methods other drugs may be found to be more effective in suppressing the rheumatic reaction.

DOES SODIUM SALICYLATE CURE RHEUMATIC FEVER?—*The Clinical Journal*, Sept., Oct., 48.

Observation made by J. Reid on patients with rheumatic fever strongly suggest that in addition to the well-known relief of symptoms, adequate oral administration of sodium salicylate can cure the disease. The return of erythrocyte sedimentation rate to normal was taken as the best test of cure available. Cure appears to depend on reaching and maintaining a high plasma-salicylate level (between 30 and 40 mg. per 100 c.c.) while the disease is still active. Building up the plasma-salicylate

level to an adequate peak value by oral administration of the drug is easy, but maintaining a high level is another matter; for after the peak value has been reached the level tends to fall in spite of continuous dosage. The fall is slight in some patients, but pronounced in others. It has been found to be associated with changes in acid base balance of the body fluids. This fall in plasma-salicylate level is of great practical importance, because relapses of the disease during oral administration of the drug develop when the fall is pronounced. Completely effective treatment of rheumatic fever with salicylate seems to demand that dosage should be controlled by repeated plasma or urinary salicylate estimations; firstly, because cure depends not only on reaching but also on maintaining a high plasma-salicylate level; secondly, because the variation in plasma levels of the patients receiving the same doses of the drug is great; and thirdly, because the initial peak is followed by a fall which in some patients may reach so low a level that a relapse will occur unless the dose is increased at once.

SALICYLATE THERAPY IN CHILDREN—(*Arch. Dis. Childhood*, March 1948).

Dr. Maggioni studied the rates of absorption and elimination of the salicylate of sodium and of Aspirin administered orally and through the rectum to rheumatic and non-rheumatic children. He found that large doses of 15 grains of soda-salicylate were excreted more slowly than 5 gr. doses. Sodium bicarbonate increased the elimination by the kidneys of salicylates.

THE TREATMENT OF CORYZA—*E. D. D. Davis, Practitioner*, October 48.

The nasal obstruction, rhinorrhoea, and sneezing, the symptoms of the common cold or acute infective catarrh of the upper respiratory tract, are known as coryza. There are other conditions which simulate the common cold, the most common of which are allergic vasomotor rhinorrhoea and influenza. Allergic vasomotor rhinorrhoea results in hay-fever-like attack common early in the morning and remaining for a variable time, but it may suddenly disappear and the nose resume its normal condition.

When the common cold is severe and accompanied by fever, illness and prostration, also when these symptoms become epidemic and of the explosive type and the nasal symptoms are late in onset, it is usually called influenza. Influenza is now considered to be due to virus A or B infection, to which is added a secondary infection by such organisms as the streptococcus and the pneumococcus. These latter organisms are responsible for complications such as otitis media, laryngitis, and pneumonia. The diphasic temperature chart relapses are said to be characteristic of influenza. The common cold is often preceded by acute tonsillitis or pharyngitis.

The treatment of the common cold or upper respiratory catarrh can be conveniently divided into (1) the immediate treatment, (2) the prevention of infection, and (3) the increase of the resistance and of the immunity of the patient.

General Treatment:—The immediate treatment is one of masterly inactivity. The patient is put to bed and isolated in his own room, particularly if there is pyrexia. He should be given as much fluid as he can drink and made as comfortable as possible. The compound tablet of codeine or Dover's powder at night adds to his comfort. It is recognized that there is at present no specific treatment which arrests or suddenly cuts short an acute catarrhal attack. The fact that there are numerous and various remedies in vogue and not one single and generally adopted treatment indicates that a successful remedy has yet to be discovered. Aspirin and whisky, sodium salicylate, quinine, urotopine and cinnamon, have all had their popularity. These are now replaced by the sulphonamides and penicillin. Sulphadiazine or sulphamerazine are now the most popular. If penicillin or a sulphonamide is prescribed it is useful to have the secretion or sputum examined for the organism. For example, if the pneumococcus is present, sulphapyridine is indicated. A pneumococcal infection of the nose is quite frequent and sometimes pneumonia follows. This infection appears to have a characteristic clinical picture. The catarrh or cold is severe, the pus is thick greenish and yellow, and it is the type of cold which spreads to every member of the household. The onset is sudden, sometimes with a rigor, the temperature is

high, and the infection subsides and suddenly almost by crisis. Pneumococci can be cultivated from the nasal secretion. Suppuration of the nasal sinuses particularly of the antrum, occurs in these, cases.

Local Treatment:—The local treatment of the nose by lotions and sprays is of doubtful value and may cause discomfort. Lotions and sprays are unpopular because it is claimed they wash away the protecting nasal mucus and interfere with the ciliary action of the mucosa. If used forcibly there is the possibility of driving the infection into the Eustachian tube or a nasal sinus. However, a steam inhalation of menthol and benzoin is useful. Penicillin lozenges and sprays often cause irritation even for a week or two after the application has been stopped. In my experience the local application of sulphathiazole or penicillin in the acute stage has not been very successful. Systemic penicillin injected in full doses is beneficial. When the nasal obstructions and symptoms are troublesome, small doses of ephedrine by the mouth or "elixir ephedrine co." (Parke Davis) are useful. The complications, such as otitis media and sinusitis, usually occur about the tenth day. If the patient has not recovered in ten days, search is made for any complication.

Prophylaxis:—Prophylaxis, or the prevention of infection is of importance to the many children, young adults and the tuberculous who are peculiarly susceptible to colds. The incubation period of colds is about twenty-four to forty-eight hours, but for how long catarrhal patients are infective is not known. It is presumed that while patients have a raised temperature they are infective, and isolation, if enforced, should be continued for two days after the temperature is normal. Isolation is often impracticable and too expensive in personal restrictions to receive general adoption. However, isolation could be enforced in schools. The infection is airborne and droplet infection is common. Polluted milk, water, food, feeding utensils, or the carrier patient may be a source of infection; the swimming bath before the introduction of the modern hygienic bath was a source of infection. The daily use of sprays, nasal lotions and gargles has been advocated by some, but clear evidence that they are of any benefit is lacking and

some observers consider them to be more harmful than beneficial.

The increase of the resistance and of the immunity of the individual is promoted by careful hygiene, improvement in surroundings, and good food. The value of antiscorbutic vaccines and of the sunlight is disputed, although some cases have benefited by such treatment.

THE DIAGNOSIS BETWEEN EPILEPSY AND SYNCOPÉ—*The Clinical Journal*, Sep., Oct., 1948.

Sir Charles Symonds thinks that diagnosis between epilepsy and syncope may be a very difficult problem. Syncope as a rule has an obvious cause—for example, long standing, especially on an empty stomach, sudden emotion, or intense apprehension. A sudden attack of falling with loss of consciousness without such a cause probably is not syncopal. It is not so safe to assume that an attack of this kind provoked by emotion is not epileptic. In some persons with reflex epilepsy emotion may be the precipitant, and it may be a particular kind of emotion. In a syncopal attack there is usually some warning—dimness of vision, weakness, uncertainty of balance. But this is not an absolute rule. A person may fall in a faint with little or no warning; and conversely, a minor epileptic attack may be preceded by similar sensations. If the epileptic attack is closely observed twitching of face or hands is commonly seen, symptoms which at first might be considered diagnostic of epilepsy. But this is not true. If the cerebral anoxia resulting from syncope is severe enough an epileptic discharge with twitching is the result. The following case illustrates the difficulties of differential diagnosis:

In 1937 a boy, aged 13, was seen. The history was that in the previous 7 years he had had 5 attacks of unconsciousness. The first occurred when he had a tooth out with local analgesia, the second on getting up after influenza, when at lunch he suddenly slid unconscious under the table. The third happened when standing in a row of boys at school waiting to be examined by a doctor, the fourth also at school while waiting to be inoculated, the fifth when, because of the recent attack, he was taken to see his family doctor,

who gave the following account: "While listening to his heart and chest his face was noticed to be very white. He then fell. At first he was pale; his lips then became cyanosed, and at the same time I noticed twitching of fingers and hands. This lasted only a few moments; his colour then immediately returned and he got up and said he was alright." The only relevant fact in the family history was that a maternal uncle had from childhood always fainted easily when frightened—if, for example, he saw an accident. The patient had had a serious head injury in a car accident at the age of 3, being severely confused for a fortnight. Decided in favour of syncope, and heard no more of him till he was 21 and an officer in the Guards.

The story then was that he had no further attacks till he was at Sandhurst, when while listening to a lecture he suddenly lost his senses and fell from his seat on to the floor. A year later he had a similar attack while being medically examined. The medical officer was convinced that this was an epileptic attack and sent him to a neurologist with this diagnosis. While the neurologist was listening to his heart it suddenly slowed to a rate of about 20 a minute, and then stopped for an estimated period of 45 seconds, during which "he had a fit, rolling eyes, rigidity, and a few convulsive movements." The neurological diagnosis was Stokes-Adams disease, and he was recommended for invaliding. The E. C. G. and E. E. G. were normal.

Dr. Denis Williams then staged an attack. Preparations were made for simultaneous recording of E. E. G. and E. C. G. A rather large needle was produced, and the patient was told that it would be stuck into his arm and would be painful. He at once became pale, with marked slowing of the heart-beat; his lips became cyanosed and he was momentarily confused. There was no abnormality in the E. E. G. The conclusion was that these attacks were neither epileptic nor symptomatic of heart block, but severe syncopal attacks with a specific emotional precipitant. He then saw Dr. Parkinson, who was confident that they were not Stokes-Adams attacks, but gave his opinion against the diagnosis of syncope. His arguments are of great

interest. "I know that in extreme instances of fainting convulsions can occur, but rarely. Ordinary faints seldom persist from the age 8 to 21 years; the warning is longer, and lesser degrees are common in the same individual. You will gather that in my opinion they might be severe faints, but I incline personally to regard them as of an epileptic nature."

Sir Charles Symonds thinks that we have here an example of what might justly be called reflex syncope. He has met with several comparable examples, and all have these features in common: (1) a specific liability to faint at the sight of blood, or an accident, or the account or thought of injury or illness; (2) a tendency for this liability to begin in youth and persist into adult life; (3) the occurrence in some attacks of epileptiform convulsions; and (4) a family history of similar liability.

B. C. G. VACCINATION—*J. A. M. A.* April '48.

Dr. C. M. Valente of Rio de Janeiro City Health Department, has published a report of 1288 children, from 12 months to 16 years of age, subjected to the Tuberculin test (Mantoux test) and X-ray examination. All these children were living in a presumably tuberculous environment. 668 of these had been orally vaccinated with B. C. G. at birth and 620 had not been immunized. Nearly all of them belonged to the poorest classes of the population. According to the Tuberculin tests, a decided prevalence of weak specific hypersensitivity could be disclosed in the immunized children. Among the 620 non vaccinated children a much higher degree of sensitivity to tuberculin was revealed. On an X-ray examination of these 620 children 1.8 per cent manifested residual tuberculosis 0.6 per cent were suspected of infection and 1.2 per cent had active lesions, 5 of the children with bacteriological evidence of tubercle bacilli. Dr. Valente from these and other observations concludes that, since a definite protection was evidenced in BCG vaccinated children in tuberculous environments. It is desirable and even necessary to extend the practice of BCG immunization as a certain means of fighting the high incidence of the disease in this Brazilian City.

ABSTRACTS

[The Miscellany

(This applies with greater force to all the cities in our Province of Madras). T.N.S.R.

DIGITALIS—J. A. M. A.—17—4—48.

Intensive search for purified glucosides of the Digitalis series during the last 75 or 80 years has resulted in the discovery of numerous principles or mixtures of active principles such as Digifolin, Digitoxin, Digalen, Digilanid, Digifortis etc. A comparison made by Dr. H. Gold of New York, of Digitalis Folia and Digitoxin in several cases, revealed that the latter was approximately a thousand times as potent as the standard Digitalis leaf of the pharmacopoeia. Where one would use 2 grammes of Digitalis one may obtain the same effect with 1.2 milligrammes of Digitoxin. The full digitalizing dose to be given at one time to persons with heart failure is 1.2 mg. This will reduce the apex rate in auricular fibrillation cases to between 65 and 80 per minute in about 75% of patients. The daily maintenance dose is usually 0.2 mg or less. (The use of Digitoxin and similar preparations have thus greatly simplified the problem of Digitalization. It will not be long before the leaf and the B.P. Tincture will become a cardiac medication only of historic interest chiefly.

T. N. S. R.

QUININE INJECTIONS IN MALARIA

—Journal of Tropical Medicine and Hygiene
V. 50 No. 10.

Parenteral administration of Quinine is held to be justified only (1) when for some reason its oral use is impossible (2) to make sure that the drug is being actually absorbed (3) in very severe cases (e.g. cerebral malaria) when the quickest possible action is necessary. In 1 & 2 intramuscular and in 3 intravenous injections should be given.

Quinine bihydrochloride which has been the compound of choice, tends (by the acidity (PH 3.5) of its solution) to cause severe pain and necrosis of tissue and often abscess formation. Dr. Winckel recommends the less soluble hydrochloride salt according to the following prescription for intramuscular use.

Quinine Hydrochloride	grains 4
Antipyrin	" 2
Aqua dist ad	1 c.c.

For intravenous use the above should be diluted ten times and not more than 8 grains given at one time. Injections should be given very slowly, one tenth of the dose every minute.

T. N. S. R.

DR. S. THAMBIAH

Ex-President, I. M. A., Madras Branch

We regret to announce the death on the night of the 18th February of Rao Bahadur Captain S. Thambiah at his residence in Madras after a long illness. Dr. Thambiah was born in 1891 at Jaffna. After his school years at Jaffna he came over to Madras and graduated from the Madras Christian College in 1913 and from the Medical College in 1917. He served in World War I and was awarded the Military Cross for meritorious services. On return, he joined the Madras Medical Service and later went to England where he specialised in skin diseases and obtained the M.R.C.P. and D.T.M. & H. degrees. Returning to India, for a time he served in the Tanjore Medical School and joined the Madras General Hospital as skin specialist and later as first Physician, being also Professor of Medicine in the Medical College. In 1945 he was awarded the Title of Rao Bahadur. He retired in 1946. Recently he was honoured by the Edinburgh University which elected him as Fellow of the Royal College of Physicians, Edinburgh. He was President of the Indian Medical Association Madras Branch for the year 1947, a member of the Academic Council of Madras University and was connected with several institutions.

February, 1949]

ASSOCIATION NOTES

Proceedings of the Meeting of the Council of the South Indian Provincial Branch held at Chettinad on 19th February 1949

Members Present:

Dr. P. A. S. Raghavan, President	Trichy
Col. T. S. Shastri, Vice-President	Madras
Dr. A. K. Rajagopalan, Hony. Secretary	Madura
Dr. D. V. Venkappa, Jt. Secretary	Madras
Dr. P. V. Sundaram, Treasurer	Trichy
Dr. K. Rama Rao	Madras
Dr. R. Sankaran	"
Dr. A. M. Sivaraman	"
Dr. C. Rama Rao	"
Dr. T. S. Shetty	Chettinad
Dr. M. W. Samuel (Co-opted)	Karaikudy

1. The following condolence resolution was moved from the Chair and passed, all standing for two minutes. This council notes with regret the passing away of the following members of the Association:

1. Dr. H. M. Rao of Madras.
2. Dr. T. S. Venkataraman of Madura.
3. Dr. T. P. Balaji of Madura.
4. Dr. P. Ananda Rao of Mangalore.
5. Rao Bahadur Capt. S. Thambiah of Madras.

The above resolution be communicated to the members of the bereaved family.

2. The minutes of the last meeting of the Council held on 24-10-48 were read and adopted.

3. The Secretary was requested to ascertain from the Head Quarters if

the Branch could have 3 representatives on the Working Committee of the I.M.A. as the present membership of the S.I.P.B. is over 1,250. If the Central Office permits the Branch to have 3 representatives, the President is authorised to nominate the 3rd representative.

4. The accounts of the Branch for the quarter ending 31st Dec. '48 were passed. The President was authorised to place a sum of Rs. 3,000 from the Savings Bank Account with the Indian Bank Ltd., Trichinopoly in a Fixed Deposit Account for a period of one year and the rest of the amount in the Current Account with the Bharat Bank Ltd. The Fixed Deposit Account is to be operated by the President, and Hony. Treasurer and the Current Account by Hony. Secretary and Hony. Treasurer.

5. Resolved to approve the purchase of a Portable Typewriter and stationery for Rs. 300 for the Provincial Office.

6. Resolved to sanction a sum of Rs. 25 as bonus for the clerk V. Venkatarathnam.

7. Resolved to request the Govt. of Madras to refer the proposed Nursing Home Bill for the opinion of the S.I. and Andhra Provincial Branches of I.M.A. before it is taken up in the Legislature.

8. In view of the increasing number of bogus medical practitioners styling themselves as 'doctors' and practising medicine without any qualification, this Council requests the members of the profession to report such cases to the Madras Medical Council for necessary action and also intimate the Provincial Office about the same.

9. It was reported to the Council that certain shipping booking agents insist on Health Certificates for Emigrants to be signed by Govt. Doctors only. The President and the Secretary are requested to investigate and do the needful in the matter.

10. Resolved to form a Sub-Committee consisting of President, Secretary and Drs. T. S. Shetty, D. V. Venkappa, A. M. Sivaraman and U. Krishna Rau, Ex-Mayor of Madras and two others to be nominated by the President to wait on deputation on the Hon'ble Minister for Public Health, Govt. of India to request that the Indian Medical Council Act be so amended as to place the Licentiates in the All-India Register in alphabetical order along with Graduates as is done in the Madras Medical Register.

A. K. RAJAGOPALAN,
Hony. Secretary.

11. As, in spite of the increased number of members to the Provincial Council, meetings of Council are attended by very few members, it is hereby resolved to constitute a Working Committee of 11 members, to carry on the administration work of the Council.

i. The members of the Working Committee shall be the President, Secretary and Treasurer (Ex-Officio) and eight others elected by the Provincial Council every year. The President shall have the power to co-opt for each meeting one member belonging to the area where the meeting is held.

ii. The quorum for the meeting shall be 5.

iii. The members will be paid II Class fare only both ways (without sleepers and other charges.)

iv. The rules of this Committee and its powers and limitation shall be drafted by the President and placed before the next meeting of the Working Committee for ratification by the Council.

12. The following 8 members shall constitute the Working Committee and they shall hold the office till the next meeting.

1. Dr. T. S. Shetty
2. Dr. S. Chandrasekaran
3. Dr. D. V. Venkappa
4. Col. T. S. Shastry
5. Dr. G. Joseph Gnanadickam
6. Dr. K. R. Kini
7. Dr. A. G. Leelakrishnan
8. Dr. K. R. Hariharan.

P. A. S. RAGHAVAN,
President

NAGAPATTINAM BRANCH

President : Dr. C. H. Venkateswaran

Vice-President : Dr. J. Y. Arthur

Secretary : Capt. S. S. Chari

Jt. Secy. & Treasurer : Dr. T. S. Varadachari

The monthly meeting of the above Association was held on Monday the 24th Jan. 1949 at the Govt. Hospital, Negapatam. Dr. C. H. Venkateswaran, Civil Surgeon, Negapatam Govt. Hospital, presided on the occasion. 16 of the local members and eight members of the sister Associations of Trichy and Ramnad were present. The Hony. Secretary extended welcome to the guests and introduced them to the members and welcomed the president who had been away for a short time on Emergency Duty. After the opening remarks of the President, Dr. T. S. Shetty, M.D., of Chettinad gave an interesting lecture on 'Hypertension—Blood Pressure'.

He dealt with the subject on the etiology, the symptoms and treatment, citing case reports. This was followed by a discussion.

Dr. P. A. S. Raghavan, Z.M.R.E., President, S. I. P. Branch I. M. A. who was asked by the Medical Syndicate to enquire about vaccination certificates

and was also present on the occasion, was requested to answer some doubts on the service conditions of the Civil Asst. Surgeon Class II etc. He was kind enough to clear the doubts saying the C. A. S. II will be gazetted soon and the fixation of pay of Rs. 150-10-250 will be given effect to simultaneously Provincialisation of Municipal and Local Board Doctors is being considered by the Govt. but it may take time. The Rural Practitioners will have the same status of C. A. S. when Rural Dispensaries are converted in regular Local Board Dispensaries and Provincialised. The Govt. has been requested to consider the recruitment of Licentiates as Basic Doctor.

All the members were entertained to Dinner in R. M. O.'s quarters. The Secretary thanked the guests, the Lecturer, the President and the host Dr. Balakrishna Iyer for the Tea and all members who responded to the invitation. The meeting came to a close at 7-30 P.M.

TANJORE BRANCH

President : Dr. Janab Mohamad Ismail

Vice-President : Dr. T. M. Pillai

Secretaries : { Dr. E. K. Menon
Dr. P. A. K. Nair

A meeting of the Tanjore District Medical Association was held on Sunday the 28th November 1948 at 4-30 P.M. in the Medical School Buildings, Tanjore.

31 members attended. After Tea, the meeting commenced with Dr. Janab Mohamad Ismail in the Chair. The minutes of the last meeting were read by the Secretary and adopted. Following this, Dr. G. A. Sundaram B.A., M.B.B.S., Civil Asst. Surgeon, Govt. Hospital, Mayavaram, gave an interesting lecture on "The

Epidemiology of Malaria' wherein he also discussed the various methods used in the preventive and curative aspects of the disease.

A small discussion followed. Dr. N. A. Sundararajulu Naidu, Municipal Health Officer, Tanjore and a few other members took part.

The President in his consulting remarks stressed on the practical methods of combating the disease and the thanked Dr. G. A. Sundaram for his fine lecture.

Our efforts to put our plans about a building for our Association have not been attended with success, since the town planning scheme has not yet been finalised.

It seems to be a fairly good record of activity for our Association. Still there is room for better work. Quite a good number of doctors are staying out of our Association. I leave it to the future Secretary and members to rope in the junior members of our profession as soon as they make their public appearance and also such of the other older people who have not yet fully realised the status of our Association. Finally I thank you one and all for your co-operation. I also thank the members of the Managing Committee for their co-operation and the help they gave me unhesitatingly throughout the year.

Summary of Meetings held during the year 1947-48.

DATE	PRESIDENT	LECTURER	SUBJECTS	HOST	PLACE
15-2-48	Dr. P. A. S. Raghavan.	Dr. Mrs. K. I. Vythingam, M.D.	Cirrhosis Liver	Gajjar Pharmaceuticals.	B. H. H. School.
6-3-48	Dr. U. Krishna Rao	Dr. P. Kutumbiah, M.D., M.R.C.P.	Diagnosis & Treatment of Heart Diseases.	Dr. Miss. A. K. Verghese.	Do.
20-3-48	Dr. T. N. Subramanyam.	Dr. S. T. Achar, M.D., F.R.C.P.	Medicine in the West.	Dr. T. V. Sundaram.	Do.
24-4-48	Dr. P. A. S. Raghavan.	Dr. John S. Carman, M.D., F.R.C.S.	Some application of Mily. & Civilian Surgery of recent years, to the work of the General Practitioner.	Dr. V. Ananthagiri.	Do.
30-5-48	Dr. T. N. Subramanyam.	Dr. S. K. Sundaram, M.D.	General Medicine.	Dr. C. R. Chary.	District Health Association.
15-6-48	Do.	Dr. P. Natesan, M.B.B.S.	Modern Treatment of Venereal Diseases	Dr. T. N. Subramanyam.	E. R. High School.
19-6-48	Do.	Dr. S. K. Sundaram, M.D.	General.	Dr. G. Viswanathan.	B. H. H. School.
7-8-48	Dr. P. A. S. Raghavan.	Dr. D. Subramanyam, M.S., F.R.C.S.	Scrotal Swelling.	Dr. V. K. Renganathan.	Do.
11-9-48	Lt. Col. R. K. Chettur.	Dr. R. Kesavan Nair, M.S., F.R.C.S.	The importance of early diagnosis in the treatment of Cancer.	Dr. V. Enok.	Do.
13-10-48	Dr. T. N. Subramanyam.	Dr. B. Ramamurthy, M.B.M.S., F.R.C.S.	Some aspects of the Surgery of the alimentary tract.	Dr. Md. Safiullah	Do.

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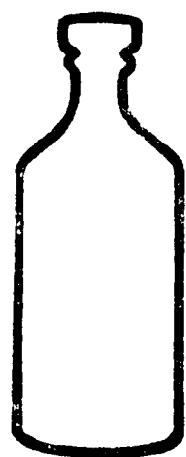
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A French medical journal reports the discovery of a new drug which is specifically effective on amoebic dysentery. It is an extract from the plant, *Hobarrhena Floribunda* (a shrub of the apocynaceous family).

An American firm has put on the market a pocket size Electronic Stethoscope. It is designed to amplify the auscultation sounds. While it helps increased accuracy of diagnosis, it is particularly useful to physicians with impaired hearing.

A new word 'Vitrella' has been added to the terminology of pharmacy in England, to denote the medicaments enclosed in glass capsule, and intended to be inhaled after crushing them. For ex., Vitrella Amylis Nitritis.

The tenth Conference of the All-India Ophthalmological Society will be held from March 10-13, in the Madras Medical College Buildings. Dr. D. S. Sardesai of Bombay will preside. There will be a symposium of Diseases of the Sclera.

The III International Congress of Acupuncture will take place in Paris from June 3-5, 1949.

Question in a Nurses' Examination. "What is the length of a normal pregnancy? Answer: "The length of a normal pregnancy is about 14 inches."
—From the J. A. M. A.

"How often do you get the head-ache?"

"Every five minutes, doctor."

"How long does it last?"

"At least half an hour."

"All doctors have given up Gopu."

"Oh, dear, is he so bad?"

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The rush for admission to medical schools seems to create problems even in England. The olden days' question by selectors of "Is there any good reason for rejection?" has now been replaced by "Is there any good reason for acceptance?"

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bacilli, there is always the danger of infection and as such it is always better to get infected and thereby get immunized before the child reaches the vulnerable period, that is, the adolescent age. Now is it possible to get rid of the open cases? At present it is not possible. So, the next step is to get our children infected, as only infection produces immunity. Koch demonstrated in the guinea pigs the mildness, the healing capacity, the production of immunity of the primary infection and the localization of the lesions which result as a result of superinfections. We think of B. C. G. so that we might infect our children with tubercle bacillus whose virulence has been reduced considerably and whose dosage also is known. The large percentage of the individuals who get infected with tubercle bacilli and who escape disease have been infected accidentally and they have escaped the disease due to various causes, a chance, the inherent vitality, etc. etc.

It is true that a great deal can be done for the prevention of this disease. Increasing the power of resistance of the individual, healthy habitation, nutritious food, etc. These go to arrest the spread of this infection. Increasing the power of resistance is always necessary both for arrest of the infection, so that the infection may not go on to disease and also to keep the healed foci in abeyance. Even calcified foci may reactivate when the vitality is lowered. People should be educated as to the nature of the infection and how it spreads. The infection is carried by inhalation. Air should not therefore be contaminated. Spitting in public places should be avoided. Sputum should be carefully destroyed. In England, this aspect of the preventive side is well-looked to. In all public places, posters are exhibited to warn the public of the danger of spitting. Special spittoons are provided in places where people collect.

There should be reconnaissance in search of this disease. Early detection is then possible. Those who are found affected should be immediately segregated. There should be a number of sanatoria all over the country. They should be properly equipped for the reception of the patients and for proper treatment at the earliest stage. The sanatoria should be situated in ideal surroundings. They should be supplied with the best nutritious food for the patients. The patients should be kept free from all worries. The State should step in and take care of them. England has begun all these in right earnest. They have a number of sanatoria all over the island. They are spending millions of pounds to improve the vitality of the people and mortality by this infectious disease has been very much reduced. Other countries are also following suit and I am sure our Government is fully aware of its responsibilities in the matter. We have to look more to the preventive side than to the curative, as there is not yet found a specific remedy for this disease. Segregation of open cases of tuberculosis, increasing the vitality of the people by improved diet, housing, etc., so that infection rate may be diminished, those cases who have been infected already may get over the infection successfully, and those lesions which have healed, may not reactivate, will go a long way towards prevention of tuberculosis. Can we in India then wait till our Government is able to come up to the line of England? This will mean years of waiting. No, we have to utilize other resources if any, to combat this disease. We have, as it is, only a very few sanatoria in our country. The vitality of the people is very low. Standard of living is very poor. Housing condition of our masses is pitiable. So, we cannot certainly be waiting and looking on. Now, what other resources have we? None except the B. C. G. vaccine. I read a few days ago articles in the dailies on the

March, 1919]

B. C. G. vaccine. There seems to be some misunderstanding of this subject. What is this B. C. G. vaccine? I shall give you a short account of it. I shall start with the three letters B. C. G., and tell you what they stand for. 'B' means, Bacilli, 'C' stands for Calmette and 'G' for Guérin who were the two scientists who first prepared this vaccine. The vaccine consists of a strain of Bovine tubercle bacilli, originally virulent, which through long cultivation on bile containing media has lost its pathogenicity for animals and man. That was what Calmette said. As a result of experiments conducted by Kraus of Vienna and Wassen of Gothenburg, the above statement had to be slightly modified. That is that B. C. G. is for animals and also for man, not completely a virulent but is of a very low virulence. That there is a very low virulence does not diminish its usefulness as an immunizing agent. Experimental investigations in laboratory animals have given evidence of an immunizing effect of the vaccine.

An infection with virulent tubercle bacilli of an animal so immunized, remains localized and usually lacks the tendency to generalization seen in control animals. The vaccination is made by injection and the animals immunized in this manner react positively to tuberculin.

Mass vaccination of new born infants have been carried out in almost all European countries. It was reported that mortality rate from tuberculosis had diminished from 25% in non-vaccinated children to 1% in those that have been immunized in the manner described.

There was criticism from several quarters because the oral vaccination did not produce positive tuberculin reaction. Unless we find the change of reaction from negative to positive, we cannot be certain of the infection which would have taken place from the vaccination. So the oral administration was

stopped and the subcutaneous route was later preferred. Due to local abscess formation which this sometimes caused, this was changed to intra-dermal and local abscess formation was thus prevented. In Scandinavian countries, I have seen B. C. G. given to new-born children and all adolescent and young people who are found to be tuberculin negative. (This is a very important factor to be considered before administering the vaccine). I have not seen or heard of any untoward effects. Before vaccination one must be convinced that the person is free from infection with virulent tubercle bacilli.

New-born infants are taken for granted to be noninfected, as intra-uterine infection is rare. So, infants as soon as born are vaccinated before contamination takes place.

If there has been the slightest chance of infection, the child should be tested and repeatedly tested. The chances of infection just before testing should not be overlooked as it takes 6 to 7 weeks for the allergy to develop in case of such an infection. So, these children who have been found negative reactors are kept in quarantine in Babies' Homes or in a separate hospital free from tuberculosis infection. If after the lapse of 6 to 7 weeks, the child is still negative to tuberculin, then B. C. G. is vaccinated. There is no purpose in vaccinating a child already infected. It may do harm on the other hand.

If on the other hand there has been no reaction after vaccination, how are we to believe that there has been any effect of immunization? There ought to be some reaction but the same reaction should not be too great to cause injury to the person vaccinated. There are very few instances when there were very bad effects. So, first find out if there has been any infection by tuberculin testing. Negative reactors are again tested after quarantine period of 6 to 7 weeks and if they are still

negative they are given B. C. G. and those cases are again protected from infection until the immunity is developed by the vaccine, i.e. 6 to 7 weeks. Then find out if the B. C. G. has produced allergy and immunity. That is done by tuberculin testing. Usually, the negative reactors would have become positive. Those few cases which still remain negative are given a second vaccination of B. C. G. That is the procedure adopted in the Scandinavian countries. There is slight difference in details followed in different countries, but I have now told you the principle on which the vaccination is based.

In the Scandinavian countries, mass X-ray units are sent around to all parts of the country, people of all ages are brought there for miniature radiography and tuberculin testing, early infections are detected and the negative reactors given B. C. G. I think in a few years there will not be any single individual who have not had the benefit of B. C. G. vaccination.

Regarding the result of vaccination, some figures are available. Those from Norway and U. S. A. are significant. In Norway, nurses before entry were tuberculin tested, and to the negative reactors, B. C. G. is given and the morbidity and mortality results were found very encouraging.

Now, regarding the bovine variety, countries other than England have combated this disease by mass eradication of stocks. Denmark, Norway, and Sweden have solved the problem of bovine infection by eradication of infected animals, but England, which is a very conservative country, has started pasteurisation of milk and tuberculin tested milk supply, and is thus trying to arrest the spread of this variety of infection.

Now, coming to our country, were are we? We have no correct morbidity and mortality figures and I do not

know what percentage of our cows are infected with bovine tubercle bacilli. We are in the habit of boiling our milk before using it. So bovine infection may not be as dangerous as in other countries where milk is not boiled before using.

But where are we in regard to the preventive side? The betel-chewing habit is rampant throughout the country, and our public roads are all spittoons. Ignorance, poor stamina, poor housing conditions etc. are problems still defying solution.

And then we have different systems of medicine prevalent in our country. The Ayurveda for instance, does not admit of the infectivity of this disease. State should step in. The persons at the helm of affairs must know what tuberculosis is, how it spreads, and how the other countries are tackling the problem successfully, educate people and make them tuberculosis-conscious. The dangers of infection etc. detailed above have to be taught. As there is no specific for the cure of this disease, we should do all we can for its prevention. To raise the economic condition of the masses, to wipe off ignorance from the country, will all take much time. Are we then to be looking on at the huge carnage of man power eaten away by this vile disease? Certainly not. We should utilize the B. C. G. vaccine in the proper way. I have told you how they do it in the Scandinavian and other countries. Indiscriminate administration of this vaccine to school-going children is not what is to be done. With B. C. G. we produce an infection which gives some protection from future infections from outside. The immunity conferred is relative and not absolute. That protection is absolutely necessary for us in India as our babies are, as a result of lack of measures for detection and segregation of open cases, exposed to infection. Even after childhood the exposure to infection outside their homes

cannot at present be prevented. Let our babies be protected before they get massive infection at home and later outside. Let them pass over the danger period protected. Of course, the period of protection effected by B. C. G. is not definitely known. Three years can be taken as a safe time.

My conclusion is B. C. G. is the only solution for us in India at present. B. C. G. is first given to new-born babies, and if that is not possible on a mass scale as I have narrated, at least those babies born in tuberculous families should be immunized by B. C. G. Vaccination.

(Paper read at the monthly meeting held at Coimbatore on 26-2-49.)

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ENIGMATIC TALES TOLD WITH CLUES (PART III)

BY

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Introduction

What constitutes hypertension, what is the aetiology, are there any distinguishable types, what is the relationship of hypertension with heredity and is there any rationale of therapy? Workers from time to time have put forth various theories following various tracks. Some recent clues have come to hand. It is probable that these clues may provide some satisfactory answer. I intend discussing these in this article.

Firstly we have to remember that hypertension is a syndrome and not a disease and secondly it is a compensatory mechanism i.e., within certain limits, it is serving a useful purpose.

Some years ago in London an Englishman aged 45 years consulted me for having 'fallen off the commode.' On examination I found he had blood pressure 240/140, papilloedema and albuminuria. I treated him balneologically—a therapy much in vogue then. He improved so much that I said "here is a cure for hypertension." But soon after, he developed heart failure and died. This left indelible mark on my memory. This was clue No. 1.

I returned to India and went for a holiday to Bangalore in July 1939 along with a judge, who had retired from service in Sind. One day, this judge "fell off the commode" and I was called. His blood pressure was 200/110. I had no ophthalmoscope and did not examine his fundus then, but there was no albuminuria. The Eng-

lishman's case was indelibly marked. I readily agreed when it was suggested that he should return at once to Hyderabad, Sind, because he was anxious to die at home. The type did not prove true. He is alive today and is as well as can be expected, though by irony of fate no more in his dear home. He leads a fairly active life including a daily walk. This was clue No. 2 for me.

Now there are two cases of essential hypertension who can be summarised as follows:—

	Englishman	Indian Judge
Age	... 47 years	56 years
Blood pressure	... 240/140	200/110
Optic. Disc.	... Papilloedema	No papilloedema
Urine	... Albuminuria	No Albuminuria
Course	... Died within one year of detection	Still alive after 10 years of detection

I had opportunities of study later, following the above clues, and I find that there are two distinct varieties which prove true. Variety No. 1 the benign type (Indian Judge) and No. 2 the malignant type (the Englishman).

Variety 1 usually occurs in elderly people, is discovered accidentally, has probably existed for many years without symptoms and runs a very slow and progressive course. This type never dies of renal failure. His chief danger is failure of pump i.e. heart or bursting of pipes i.e. cerebral haemorrhage. There is no danger of renal failure and there is no albuminuria except when there is renal congestion secondary to heart failure.

March, 1949]

ENIGMATIC TALES TOLD WITH CLUES

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Variety 2 usually occurs in younger people, is discovered earlier in life, there is usually some swelling of optic disc. Diastolic pressure is very high 120—140 or even 180 and systolic pressure is usually 240 or more. He runs a rapidly down hill course and is dead within one to two years. He develops signs of renal insufficiency and dies of uræmia or heart failure or a combination of the two.

Before passing on to therapy I would like to mention secondary hypertension which is a separate entity. This discussion will help in the understanding of aetiology.

Very many years ago whilst a student in the Edinburgh Infirmary a Scotsman aged about 30 years was admitted as my case with signs of hypertension. He gave history of migraine of two years duration, and more recent history of dragging pain in the loin. His blood pressure both systolic and diastolic was very high, he had albuminuria and cylindruria. Intravenous pyelogram gave no clue as there was no excretion from either kidney. Renal concentration power was very poor. He died of uræmia. Postmortem showed a large polycystic kidney on one side and a very small scarred kidney on the other. Which is the cause and which is the effect I whispered to my neighbour? The teacher overheard and said "malignant hypertension, Gentleman, malignant hypertension." I never forgot this episode, and it remained in my memory as a query—Clue No. 3.

In 1939 I read Wilson's work who adduced experimental evidence that severe and persistent hypertension of malignant type can be produced in rats by constricting renal artery on one side only. Autopsy revealed secondary changes of necrotic type in the renal arterioles of the opposite side. If clamp is released in time or kidney

removed, hypertension disappears and opposite kidney is restored. This is what he postulated:—Clamped kidney becomes ischaemic, it produces renin, this leads to compensatory hypertension. If this hypertension is severe it initiates necrotic changes in the arterioles of the opposite kidney. There is still further ischaemia and still higher hypertension and thus a vicious circle is created; Diseased kidney, ischaemia, renin produced hypertension, secondary changes in the healthy kidney, further ischaemia, further rise in hypertension and so on. I have often wondered whether the Scotsman patient was not such a case, whether nephrectomy of the diseased kidney in good time might have restored his blood pressure to normal and prevented degenerative changes occurring in the opposite kidney.

Aetiology

Now I shall discuss the aetiology.

So far essential hypertension is concerned whether benign or malignant, heredity plays a predominant role. But whether the disease is conveyed as a mendelian dominant factor in 100% of cases or whether the gene is modified by other genes i.e. the dominance is absolute or relative, is not yet finally settled. The present teaching is in favour of the latter, that the two types constitute varieties of the same disease, that they have the same heredity factor operating and that either type may be produced by the same mechanism. Whereas such is the hereditary background, the other factors—the contributing or secondary factors—can't be ignored and these are (i) dietetic, eg., excessive use of meat and its extractives (ii) alcohol (iii) dormant pus lurking somewhere in the system (iv) worry and anxiety (v) renal diamines. How concealed pus can be confusing will be apparent from the following case:—

ELECTRO-ENCEPHALOGRAPHY AND ITS DAILY USES

BY

DR. S. T. NARASIMHAN, *Madras.*

Electro-Encephalography is the term used for the recording of the electrical potentials discharged by the nerve cells of the gray matter of the cerebral cortex from the surface of the scalp. It is otherwise known as non-traumatic method for diagnosis. This has helped Neurologists, Neuro-psychiatrists and Neuro-surgeons, in diagnosing nervous diseases with greater precision and certainty. For the diagnosis of most of the nervous diseases, this has been of great help without subjecting the patient to any surgical or painful procedures. This is now commonly employed in clinical medicine because it aids in the diagnosis of epilepsy and of organic brain diseases, and because it affords a painless and entirely safe method for localising cortical lesions. Since it is an ultratechnical method, it might appear wise to leave it entirely in the hands of experts. Physicians, however, must acquire the same general knowledge of that just as they must have of Roentgenography and Electro-cardiography, if it is to be intelligently applied to clinical problems.

It was Canton who in 1875 reported to the British Medical Association that the nerve cells of the gray cortex of the central nervous system are continuously active, giving out electrical discharges which can be recorded with electrodes. Because these are so feeble as to vary within a range of usually 10 to 50 millionth of a volt, a vacuum tube amplifier is employed. This has a voltage amplification factor of approximately 10 million and a sufficient power output to drive a rugged but relatively insensitive writer. The records are usually made with an ink-writing stylus, on a paper tape which moves at a rate of 3 cms. per

second. A clinically satisfactory instrument should contain at least three or more independent amplifiers and writers so that simultaneous records can be obtained from three or more separate brain areas. All frequencies between 1 and 70 per second should be recorded without distortion. Electro-Encephalographs are not easy to design or construct. An improperly built or inadequate instrument is a source of grief and confusion. The value of an Electro-Encephalogram is determined not only by the quality of the instrument but also by the competence of the Electro-Encephalographer. The taking and interpreting of this type of record demands more than common skill and diligence.

In 1902 Berger in Germany tried picking up the waves from the surface of the scalp of dogs with similar instruments and succeeded in getting a good tracing which he called Elektro-Enkephalogram, in contrast to the record from the cerebral cortex which was termed Elektro-Corticogram. He announced the results of his experiments on human beings only in 1929.

Many people have worked on this subject since a long time and different uses have been recommended by them. Drs. Bagchi, Basset and Peet state that Electro-Encephalography have passed the stage of pure research and has become a dependable and almost indispensable adjunct to the supportive and diagnostic armamentaria of the Neurologists, Neuro-Psychiatrists and Neuro-Surgeons.

The uses for this technique are many. For a long time it was being used for the diagnosis of the following conditions:—Epilepsy, Cerebral tumors,

Subdural Haematomas, Cerebral Haemorrhage, Cerebral thrombosis, Cerebral trauma, Cerebral abscess, meningitis, Encephalitis, Scheilder's type etc. Its use has been further developed for investigation and utility in cases of headache, migraine, Schizophrenia, attacks of dizziness, attacks of unreasonable anger, cruelty and assaultive behaviour, abnormal discomforts with no known somatic etiology. It helps in distinguishing hysterics from real pathological conditions. The hereditary tendency of many of the cerebral disorders such as epilepsy etc. can be diagnosed with this technique. This has been given a legal backing in the United States to avoid imbecile children being produced. It has been also acknowledged that many of the accidents either on the road or in the air or in many other precise technical works in factories and other workshops were due to a condition similar to epilepsy. So in conditions where you require precision and concentration as in defence services, civil aviation, rail road services, automobile driving, Electro-Encephalography is being constantly used and accidents are very largely eliminated.

In Psychopathological disorders like Schizophrenia, EEG. recording has rendered great help. For instance a case of Schizophrenia which has a normal Electro-Encephalogram before shock-treatment promises better clinical results from the shock-treatment. An abnormal Electro-Encephalogram indicates the necessity for a longer treatment. Records taken about fifteen days after the treatment, if still produce abnormality, that indicates need for further shock-therapy. Putnum and Zimmerman have stated that the Electro-Encephalographic changes vary in direct proportion to the amount of cortical cell damage within a certain cortical range and is related to the amount of force applied to the cortex. This is very helpful in cases of head injuries. The uses of Electro-Ence-

phalography have been greatly appreciated in the diagnosis of the presence of Subdural Haematoma, due to instrumental delivery or other traumatic procedures.

Drs. Bagchi and Basset have developed a three dimensional technique with which they are able to localize intracranial tumours to the narrowest point which really helps surgeons in the emplacement of flaps and restricting the size of the flap. In their 1946 series they have localized 88.3% of all the supratentorial and intracranial neoplasms which have been verified either at operation or by Pneumography or by Angeography or at autopsy. They state that their percentage of success in 1947 serious is about 93%. With regards to localization they opine that EEG is entering into a stage where it will not only recount its success but also assess the cause of its failure.

WAVES :—The types of waves that have been recorded are classified under three headings: (1) Alpha which have a frequency of about 8 to 13½ per second which are more prominent at the occipital region than in other regions. They have an amplitude varying between 50 to 100 MV. (2) The Beta waves have a frequency varying between 17 to 30 per second and an amplitude of about 20 MV. These are predominant in the frontal areas of the brain. (3) The Delta waves are slow waves which have a frequency of less than 7 per second. Their amplitudes vary under different conditions as well as the frequency. In normal persons these waves are predominant in the records at an age below 8 and 9 years but they are not uncommon upto the age of 16.

The importance of the Delta waves are more appreciated in their pathological patterns as in epilepsies and tumours and encephalitic conditions. The three chief important types of

epilepsies can be differentiated with this technique and treatment varied according to conditions. In Grand-mal types of epilepsy you get the following types of waves as (a) Diphasic spikes, (b) Inverted cones, (c) Constricted Alphas (d) Flat topped Delta with a frequency between $3\frac{1}{2}$ to 5 per second.

In Psychomotor disorders you get Delta Rat-toothed waves, serrated waves, etc.

In Petitmal types of disorders you get the spike and waves and abortive spike and waves.

In Encephalitic conditions as well as meningitis you get high voltage Delta waves with a frequency of 2 to 4

per second and they are all smooth waves.

In tumours you get Delta waves which are irregular and have a frequency of between $\frac{1}{2}$ to 4 a second but localized to some area.

The subject being by itself an enormous one it is not possible to deal with it exhaustively. The records which I have produced in this article have been done at the Indian Neurological Institute, and in many of them interpretation of the pathological conditions have been proved beyond doubt by follow up and surgical manipulations and Pneumography.

(We regret that we are not able to reproduce the Encephalograph tracings submitted by the author—*Mg. Editor.*)

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ABSTRACTS FROM THE CURRENT MEDICAL LITERATURE

INSTRUCTIONS FOR THE PATIENT WITH DYSPEPSIA — C. M. Fletcher, M.D., F.R.C.P.—The Practitioner, Jan. '49.

There is a common belief among the laity that doctors are initiated, during their long training, into the magic of chemical transformations, into rites of death and potions of life, and develop a mysterious omniscience in which the untrained cannot share. "My doctor says....." is often a prelude to a statement that is considered almost oracular. The common belief in these mystical powers is of great importance to some practitioners. For them the idea that a patient may not only understand but even undertake a part of his own treatment is a dangerous heresy, the acceptance of which might lessen the efficacy of the many placebos with which his therapeutic regimes abound. There was perhaps some justification for this esoteric attitude some thirty or more years ago when the physician had almost no specific and effective remedies to prescribe, but now that the laboratory worker has provided him with real therapeutic power he has no longer such need to rely on mystery and he may often, and with benefit, lead his patients towards considerable understanding of the nature of their maladies and the purpose of their remedies. There is usually no need for a patient to understand the nature of acute and transient illnesses, except in so far as his curiosity may lead him, but in chronic and recurrent conditions, when treatment may have to be prolonged or repeated, much may be gained by training the patient to understand his symptoms and their treatment so that he may manage them without constant recourse to medical advice.

The Need for the Patient's Cooperation.—The advantages of such understanding are perhaps best seen in cases of diabetes mellitus, in which the training of the patient in the management of his diet, his varying insulin requirements, his hypoglycaemic reactions and so forth, is an essential part of successful treatment. Similar advantages may also accrue to the chronic dyspeptic whose symptoms,

whilst recurrent and troublesome, are not so severe as to warrant a surgical operation. It is not suggested that either the diabetic or the dyspeptic should cast medical man aside and become his own amateur medical adviser. The initial diagnosis and prescription of the appropriate regime must be in the hands of an experienced physician. From the outset, however, the patient should be given an insight into the rationale of his treatment, and should, from then on, feel himself to be a pupil and ultimately a collaborator with his doctor in intelligent and careful management and follow-up of his case. Thus he will be able, on his own account and for long periods, to make such alterations and adjustments in his regime as the changing circumstances of his case may demand. It should, however, be made clear to him that the occurrence of new symptoms or the failure of old symptoms to respond to accustomed treatment should always be the occasion for seeking further advice from his doctor.

If this thesis be granted, there remains a serious practical problem, and that is the means by which the patient is to receive the instruction that he needs. The practitioner has no time to give each dyspeptic patient a long discourse on his condition and its management, nor is it usually possible to muster a group of patients for a lecture. It is because of this difficulty, more than because of the doctor's desire to retain mysterious authority, that the majority of patients with indigestion are given such scanty instructions concerning the nature of their illness and the reasons underlying the regime that they need to follow. The solution can only lie in the provision of a pamphlet, simple but thorough, which the patient may be given to read. On his subsequent visits to the doctor he must be encouraged to ask questions on any points that remain obscure, for no pamphlet, however well designed, can suit every case or every level of intelligence. Even if many questions have to be answered, the time and effort spent by the practitioner on each case will be far less than if he had to carry out the whole instruction verbally.

The following pamphlet is an attempt to explain in simple language the principles and the practice of the treatment of dyspepsia. It is hoped that its use may be found of value, either unmodified or modified to suit the particular therapeutic inclinations of individual practitioners.

Before presenting the pamphlet, however, it is necessary to make clear what is meant by the term dyspepsia. It may be defined as painful gastric or duodenal dysfunction, whether due to peptic ulcer or to other causes. The clinical picture consists of epigastric pain or discomfort which bears a definite relationship to the taking of food or milk, being either relieved or exacerbated by it, and which is relieved, at least to some extent, by alkali. This simple diagnostic rule should make it possible to avoid treating as dyspepsia a pain due to arthritis of the spine, fibrositis, cholecystitis, disease of the intestine, or thoracic disease. A more precise diagnosis than that of "dyspepsia" is usually necessary for successful treatment, but the means by which this precise diagnosis may be reached will not be discussed here. The pamphlet is intended solely for those cases in which a dietary regime suitable for peptic ulcer is required, whether the diagnosis is in fact peptic ulcer or inoperable cancer, "postoperative stomachy", "gastritis", or dyspepsia of uncertain origin.

What is Indigestion?—During digestion, the food we eat is broken down into simple substances which can be dissolved in the blood. They are then taken by the circulation to the various parts of the body where they are needed for growth or healing, or simply for providing energy and warmth to maintain life.

When a mouthful of food is swallowed, it passes down the gullet into the stomach, which is like an elastic bag. This is where digestion begins; the food is mixed with digestive juice and becomes softened before passing on into the first part of the gut which is called the *duodenum* (its name comes from the Latin for twelve—*duodecim*—because it is about twelve finger-breadths in length). Here it is mixed with bile from the liver and with digestive juice produced by the pancreas (sweetbread). It then goes on into the

rest of the gut where digestion is completed and the digested food is absorbed into the blood to be carried all round the body. In the stomach the digestive juice is acid (about as acid as vinegar), but in the duodenum the acid is neutralized by alkali from the pancreas.

Normally your stomach does not digest itself. This is rather remarkable when you think that if you eat a piece of tripe, which is sheep's stomach, it is digested away perfectly easily. The healthy stomach and gut have some means, which we do not completely understand, of protecting themselves against the action of their own digestive juices. When you have indigestion this self-protection may fail, as we shall see.

What is "Indigestion"?—The symptoms of indigestion are pain or discomfort in the neighbourhood of the stomach or the lower part of the chest and sometimes in the back, before or after taking food or drink. There may also be belching and repetition or even vomiting of food which may ease the pain. These symptoms are not actually due to the food failing to get digested, but they are due to some sort of soreness or inflammation of the lining of the stomach or duodenum. This is made worse by the acid in the stomach juice, which does not hurt a healthy stomach, but which may hurt if the stomach lining is already sore. That is why the pain may be ceased by taking alkali (such as bicarbonate of soda or magnesium) which neutralizes the acid, or by vomiting, which empties the stomach of the acid. A sore stomach works badly and often fails to empty, so that it gets overfilled, and this is what leads to vomiting.

In some cases, if the inflammation continues and gets worse, the lining may lose its power of resisting digestion and an ulcer or sore may form. These ulcers only form in the presence of acid, that is, in the stomach or in the first part of the duodenum before the acid has been neutralized. If the inflammation still continues, the ulcer may get bigger and deeper, and more serious complications may follow. Fortunately, these complications are rare.

The ulcer may "perforate," which means that the stomach or duodenum gets

digested right through in one place so that food and digestive juices escape through the hole into the inside of the abdomen. This causes sudden, extremely severe pain, and it is necessary for an operation to be performed as soon as possible to sew up the hole.

The other complication is when a blood vessel is digested away. If this happens a haemorrhage occurs and blood may either be vomited or passed by the bowel, when the motions appear black and shiny like tar. If the haemorrhage is severe the patient may faint, and in some cases blood transfusion is necessary.

So you see how important it is to treat indigestion early, before an ulcer has formed, and you can also see that once an ulcer is formed, really strict treatment is necessary in order to avoid serious complications. The objects of treatment are to rest and soothe the stomach so that the inflammation may get better, and to protect it against its own digestive action until it has regained its natural powers of resistance. In a few cases these simple methods fail and it may then be necessary to do an operation to remove the ulcer and part of the stomach that produces acid. But this should seldom be necessary if indigestion is properly treated before it has become too bad.

There are four main lines of treatment for indigestion:—

1. Taking a suitable diet
2. Taking medicines and powders
3. Rest for the mind
4. Rest for the body

Diet—The object of dieting is to give the stomach the sort of foods it can handle most easily and to avoid habits which upset it. Here are the rules:—

(1) *Have regular meals.*—Your stomach likes regular hours. It is used to being filled with food at the usual meal-times. It prepares for these expected meals in advance; it becomes active, and produces digestive juice and acid in readiness. If the meal is delayed you may get pain and the stomach may begin to injure itself. *So be regular and punctual in your main meal-times.*

(2) *Have frequent "snacks."*—Food (and remember milk is the best of foods) temporarily neutralizes the acid in the stomach. That is why indigestion pains are sometimes eased by meals or snacks. You may think you should rest your stomach by eating little or nothing if you have indigestion, but this is where you are wrong. An empty stomach may start to digest itself, particularly when it is active during the day. *So take a snack at least every two hours* during the day, and at night if you wake.

(3) *Avoid big meals.*—Big meals overfill the stomach and irritate it: "*little and often*" should be your motto.

(4) *Eat slowly and chew thoroughly.*—If you hurry your meals you cannot chew properly. Unchewed lumps of food irritate the stomach and take a long time to soften. Meals must be eaten slowly and every mouthful must be completely softened by chewing before it is swallowed. If your teeth are not good you cannot chew properly and you should go to your dentist to have them put right or to have false ones fitted. Some foods are difficult to chew up even with perfect teeth. They are given in the list of "indigestible foods" and should be avoided.

(5) *Avoid stimulants.*—Tobacco, strong tea, coffee and alcohol all stimulate and irritate the stomach. *Stop smoking.* If you cannot stop completely, then only smoke after a main meal. *Avoid alcoholic drinks* of all kinds, especially on an empty stomach. *Tea* should only be taken with plenty of milk. *Coffee* is best avoided, but may be taken very weak, with plenty of milk. You should also avoid strong seasoning, pickles and spices and, of course, particular foods which you have found from experience are liable to upset you.

Details of three diets are given later: a very strict one (No. 1), a moderately strict one (No. 2) and a generous or convalescent one (No. 3).

When you start dieting your doctor will tell you which diet to take and he will give you a priority card which will enable you to get the extra milk and eggs that you will need. In general, No. 1 is for those who have much vomiting or severe

pain. No. 2 is for those with considerable pain but little vomiting. No. 3 is for those with only mild pain or discomfort.

Increases in diet should be taken on your doctor's advice. Any increases should be slow and gradual, the stricter diets being modified by the inclusion of items from the fuller diet one by one.

Return to normal diet.—Indigestion pains disappear long before the actual inflammation has gone or the ulcer has healed. You should not take a normal diet until your ulcer (if you have had one) has been healed or you have had no indigestion for at least six months. However, you should always avoid the most indigestible foods (listed below) and anything else which you personally find indigestible.

If you have a return of pain, you should do two things:—(1) Try to discover what has upset you. It may be something you have eaten or it may be worry, or indulgence in a "stimulant." Avoid it in future. (2) Go down a step on the diet scale (i.e. if you are on a normal diet, take diet 3, or if you are still on diet 2, take diet 1 and so on) for a few days and rest as much as possible. If the pain goes, gradually increase your diet over a period of a few weeks. In this way you may prevent a slight return of indigestion developing into an ulcer. If the pain persists, consult your doctor.

Medicines and Powders—Medicines may be very useful for indigestion, but should only be taken on the advice of your doctor. They may be used to neutralize acid, to soothe the stomach, to supplement a strict diet or to help you sleep.

(1) *Antacids.*—These are usually white powders, tablets, or medicines containing various sorts of alkalis to neutralize the acid in the stomach. Some of them (especially bicarbonate of soda) may be harmful if taken in large quantities over a period of weeks or more. Your doctor will tell you whether you should take them at all, and in what quantities and how often. If one sort does not ease you or if it affects your bowels, ask him to try a different mixture. The best rule is to take alkali between meals and snacks when you have pain or discomfort, but some people prefer to take them immediately after meals.

(2) *Belladonna* and *olive oil* may soothe the stomach and may be advised by your doctor.

(3) *Vitamins.*—A diet that is suitable for indigestion may contain very few vitamins, so your doctor may advise you to take vitamin tablets or fruit juice. Do not forget to take them; they may be very important in speeding your recovery.

(4) *Sedatives.*—These may be useful if you are worrying or are not sleeping well.

Rest for the Mind—Everyone knows that sudden fear or a shock can affect the stomach. People talk of being "sick with fright" or say their "stomach turned over", and it is a fact that the working of the stomach may be upset by fear. Sudden frights do not serious harm, for they are soon over, but continuous mental strains, anxieties, frustrations or resentments, even though they are small in themselves, combine to keep the stomach in a state of irritation which may lead to symptoms of indigestion, and even to an ulcer.

People who get indigestion are often of a worrying, sensitive type, even though they would hate to admit it. Perhaps you do not think you are, for you may keep a firm grip of yourself. Just ask yourself these questions and give an honest answer:—

Do you turn little worries over and over in your mind, although you try to appear calm and unconcerned?

Do you brood over bad luck, or when you feel you have been "done"?

Do you resent criticism or worry about what people think of you?

Do people "get on your nerves" easily?

Do you have to drive yourself all day because you have really got too much to do, so that you are always "on the go" and cannot relax?

Are you usually dissatisfied with yourself so that you are always striving to do "one better"?

Do you feel people do not understand or appreciate you enough?

If you must honestly answer "yes" to more than one of these questions, then mental strain is probably playing a part in upsetting your stomach. There is nothing to be ashamed of in this. Indeed the most valuable people are often those who drive themselves into doing or

worrying about more than they can really manage. But, if you are to do your job properly, you must give your stomach a chance. So you must learn to slacken off your stresses and strains. Stop turning things over and over in your mind. Laugh it off if you are offended or ticked off, or if people annoy you: do not let them get a rise out of you.

See if you cannot get a chance to rest and relax your mind occasionally during the day. This may mean giving up some of your activities, or handing over some responsibilities, but it is better to do fewer things well than to do a lot of things badly because you are unwell, or to have to go to bed and do nothing at all for a while.

Many people have proved for themselves the truth of the text: "Thou shalt keep him in perfect peace whose mind is stayed on Thee. You may well seek and find the peace of mind that you need from this Source."

If you have any special worries, talk them over with a sensible friend. If you still go on worrying and feeling on edge, tell your doctor. He may be able to help you and, if necessary, he may give you medicine to settle your nerves and help you to sleep. He may also be able to advise you whether you should not arrange your work differently on medical grounds.

Rest for the Body—We have seen the importance of rest for your mind; but what about rest for your body? This is very important, too. When you take exercise your muscles need more blood to circulate through them. They get it at the expense of the rest of the body, and particularly at the expense of the stomach. So you must avoid taking exercise either just before or just after meals. Sit still and relax for at least a quarter of an hour before and after your main meals and let your stomach do its job in peace. If your indigestion is really bad it is best to go to bed for a time. Nothing will stop indigestion pains more quickly than going to bed for a complete rest. Your doctor will advise you how long you need to stay in bed. If you have had an ulcer you may need to stay in bed long after

the pain has gone, until the ulcer is really healed.

Really sound sleep is most important for anyone with indigestion. A restless night is as bad for your stomach as an anxious day. You may need medicine or tablets to help you sleep. They are quite harmless, and are not dangerous drugs if used sensibly under medical direction, so do not hesitate to take them. If you are not sleeping well, ask your doctor to give you something to help you get a really good night's sleep.

Anticipation.—Forewarned is forearmed. If at any time you know you are going to have an unavoidable time anxiety, of worry or overwork, it is wise to anticipate a possible return of indigestion by going on to a stricter diet, taking powder or medicine regularly (if your doctor prescribes them), and resting whenever possible—going to bed early and even spending week-ends in bed.

Essentials—To sum it all up, then: to treat and avoid indigestion you need:—

- (1) A suitable diet, with regular, frequent, small, unhurried meals.
- (2) No smoking or other stimulants.
- (3) A calm mind and a time to relax.
- (4) Sound sleep.

If you can manage all this, your stomach will get well and stay well.

* * * * *

RENAL COMPLICATIONS OF SULPHONAMIDE TREATMENT—*The Clinical Journal Jan., Feb. 1949.*

The renal complications of sulphonamide treatment may be (1) mechanical and extra-renal, (2) mechanical and intra-renal, or (3) toxic and intra-renal. The cases in the first category are far more numerous than those in the other two categories and, provided the diagnosis is early and appropriate treatment is instituted, the prognosis for the first category is good. The pain in the small of the back, haematuria and oliguria, ultimately followed by anuria in bilateral disease, are due to the deposit of crystals in the renal pelvis, ureters, and often in the bladder. In the second category, crystals are deposited in the kidney itself, and the signs and symptoms

are the same as in the first category excepting the cystoscopy reveals no crystals in the bladder, and there is no resistance to the passage of a ureter catheter to the renal pelvis. The cases in the second category are rare and the prognosis is usually bad. Unless this condition is kept in mind, it is apt to be overlooked on a negative cystoscopic examination. Cases of the third category are also rare and the prognosis again is bad. There is no deposit of sulphonamide crystals in the urinary tract, but the renal tubules undergo toxic degeneration reminiscent of poisoning with perchloride of mercury. This condition has been recognized and studied only during the past 2 years. Its manifestations are apt to be somewhat indefinite. There may be no pain in the small of the back while the urine is almost normal. But, as a rule, there is albuminuria with haematuria, cylinduria and oliguria, which end in anuria. All three categories may occur simultaneously.

At the Bispebjerg Hospital, Denmark. A. Harrestrup Anderson and Ib Anderson have in the course of only 18 months observed 11 cases of sulphonamide anuria, fatal in 3 in spite of intensive treatment. They suggest that this is much more common than the number of published cases would indicate. In 7 cases the patients belonged to the first category, and only one to the second. In 3 cases the condition was toxic and intra-renal. The 11 cases concerned only 10 patients, as one represented 2 cases with an interval of 6 months. This patient a man, aged 24, was given sulphonamide treatment on both occasions. He suffered from pneumonia, and died of toxic intrarenal sulphonamide poisoning during the second attack. The necropsy showed interstitial nephritis with fibrinous pericarditis and pleuritis as well as oedema of the lungs. This case, like several others on record, shows that once sulphonamide intolerance has manifested itself it is not wise to give the drug again.

The dosage of the various sulphonamides in these cases was not remarkably high, the average total dose being 21 g. In one case only 5 g. of sulphapyridine had been given. Other observers have found that sulphonamide anuria may occur with a quite moderate dosage. Murphy and his

associates have concluded that "the quantity of the drug used bears little or no relation to renal injury." Prophylactic treatment is simple and effective. The patient must be told to drink plenty of fluid so that he excretes at least a litre-and-a-half in the 24 hours. Sodium bicarbonate in doses of 2.5 g. 6 times a day renders the urine neutral or slightly alkaline, and prevents precipitation of sulphonamide crystals in the urine. The combination of different sulphonamides is also effective, as the presence of one sulphonamide does not affect the solubility of the other sulphonamides. When anuria is mechanical and extra-renal, ureter catheterization and irrigation with isotonic bicarbonate solution, supplemented by the parenteral administration of a bicarbonate, is nearly always successful.

CONCEALMENT OF SKIN BLEMISHES—*The Practitioner*, Sep. 48.

For the protection of the skin and the disguise of defects the following paste is recommended by A. W. Stillians (*Archives of Dermatology and Syphilology*, Feb. 1948):—

Red ferric oxide	6 per cent.
Yellow ferric oxide	8 per cent.
Titanium dioxide	86 per cent.

The base is a bentonite jelly made by adding 10 gm. of shifted bentonite to 75 c. cm. of stronger rose water, to which has been added 0.5 c. cm. of liquefied phenol. After a jelly has formed on standing, this is slowly added with trituration to 15 gm. of the above powder, to make a smooth paste. Hardening is liable to occur in time owing to loss of water, but this can be overcome by rubbing the moistened finger over the surface. In covering power titanium dioxide is said to surpass zinc oxide, and it is claimed that "an extremely thin coating of this preparation is sufficient for protection of the skin from light or for the concealment of blemishes." To obtain the desired shade the proportions of red and yellow oxides may need to be altered. One of the advantages of this paste is said to be that there is relatively little danger of sensitization.

TREATMENT OF INFECTIONS OF THE HAND—*The Clinical Journal*, Sept. Oct. 48.

Prof. R. S. Pilcher, R. L. G. Dawson and B. B. Milstein describe, from the Hand Clinic of University College Hospital, a conservative method of treating hand infections which, without penicillin, has given better than average results with less than average trouble; secondly, the results of combination of this treatment with penicillin. The treatment in some respects is counter to the orthodox.

Most infections of the hand are caused by the *Staphylococcus aureus*, which by its powerful exotoxin causes death of tissues and thrombosis of vessels. In the natural evolution of infection dead tissue is separated by suppuration and rejected as slough or sequestrum. It is important to recognize that death of tissue is an early feature of staphylococcal infections, and that patients seldom seek treatment before it has occurred. Sloughing is conspicuous in the fibrofatty subcutaneous tissue of the front of the hand and fingers because of the dense fibrous tissue, which yields slowly to liquefaction. Thrombosis of vascular trunks is not common, but is the probable cause of massive necrosis of the terminal phalanx and of the rare cases of gangrene of the whole or part of a digit. It is often stated that vascular accidents are due to arterial obstruction by tension in an inflammatory focus, particularly in the pulp. Based on this unproved speculation early incision is widely practised, to the detriment of many fingers. But death of tissue depends on bacterial toxins and not on anatomical peculiarities of the part. The so-called closed space of the pulp has no significance, and infections of the deep palmar space are not seen in the clinic. The anatomical feature of the hand of cardinal importance in infections is the skin, which is thicker than elsewhere, and on the front is almost fixed to the deep fascia by fibrous bands and septa, some of which connect with periosteum. The hard inelastic skin does not yield to inflammatory swelling and allow pus to escape.

Suppuration takes place at three levels—in the epidermis, dermis, and subcutaneous tissue. An epidermal abscess is usually described as subcuticular and may be con-

fined to that layer, but often is connected with deeper abscesses by a narrow track ("collar-stud" abscess).

Abscesses in the dermis can sometimes be recognized by careful inspection of the floor of a subcuticular abscess, and it is important to recognize that there is no subcutaneous abscess. This abscess may be confined to the subcutaneous tissue, but is often accompanied by a subcuticular extension. In favourable cases all that is needed is unroofing of a subcuticular abscess. Without appreciation of the distinction between the three levels there can be no logical surgical treatment.

Misconceptions are common, particularly in regard to paronychia, which is primarily a subcuticular or intracutaneous infection of the nail fold, and abscess formation deep to these levels is rare. The abscess may lie on the deep or superficial aspect of the nail fold, and may extend round the fold or under the nail, but not into the subcutaneous tissue.

The most important subcutaneous lesion is infection of the pulp of the finger, which does not differ in essentials from other subcutaneous infections, but sloughing is of special importance because it impairs the delicate tactile function of the pulp. Bone necrosis is a well-known complication of this infection, and its prevention has been the aim of much misdirected surgery. The soft tissue of the pulp is at least as important as the bone, but many attempts to save the bone by early surgery have ruined the function of the pulp. That bone necrosis is due to pressure ischaemia has never been proved, and nowhere else is surgery advised for subcutaneous cellulitis before pus has formed. Another type of infection that may involve bone is the apical abscess at the tip of the finger under the edge of the nail, extending dorsally under the nail and ventrally into the pulp, so that the roof of the abscess is formed partly by nail and partly by skin. It may infect the end of the terminal phalanx.

The common subcutaneous lesion of the hand is the web abscess which may present on the front or back or both, and may involve more than one web. It arises in many ways, but is often the sequel of an infected blister or crack at the base of

the finger. It is sometimes mistaken for abscess in the deep palmar spaces, and the incisions usually advised for the latter are adequate for web abscesses. Complex palmar abscesses are sometimes seen in which a subcutaneous component is continuous with one deep to the palmar aponeuroses.

Oedema is an important feature of all hand infections. It is always greater on the back than on the front, irrespective of the site of infection, because the dorsal skin is looser. It has often misled the inexperienced to a wrong diagnosis of the site of infection. Oedema is an inevitable sequel to infection, but its extent can and should be controlled. Excessive swelling calls for postural treatment, for, the oedema being inflammatory in origin, is rich in protein and, if allowed to persist, will contribute to stiffness of the hand.

Treatment. The two principles are to rest the hand during the diffuse phase of the infection and to postpone incision until a localized abscess has formed. Various forms of splint have been tried, but abandoned for volar or dorsal plaster-of-paris slabs from the upper forearm to the fingertips, holding the wrist slightly extended and the fingers slightly flexed at all joints. The finger-tips are fixed by turning the end of the plaster over them. The thumb requires a modification of the simple slab, and it, too, is splinted in flexion. Attempts to splint single fingers, leaving the others free, have been given up, since they are seldom satisfactory, and the patient should refrain from using the hand at all during the period of rest. The splinted hand is supported in a sling; but, if there is much oedema, the patient is instructed to elevate it at home, or he may be admitted for a day or two for continuous suspension. This treatment alone has been effective in controlling cellulitis and localizing infection. Pain, too, is usually relieved, but some patients require anodynes. Splinting is continued until the lesion is judged to be healing. There may sometimes be rapid recovery without suppuration, but usually an abscess forms, and splinting is then continued at least until the first dressing after opening of the abscess. Treated by rest alone most abscesses come to the surface as subcuticular lesions, and simple unroofing of the subcuticular component

may give adequate drainage. To wait for this in every case waste times and subjects the patient to unnecessary pain, but will probably do no other harm.

Incision. The usual practice in the clinic is to incise when an abscess and its exact site are diagnosed. As long as there is doubt about the presence of pus, treatment by rest is continued. If an abscess is diagnosed at the first attendance and there is little cellulitis round it, it is opened at once. In the presence of cellulitis the diagnosis of pus and its site may be difficult, but after a period of rest, with the resulting diminution of swelling and tension, it becomes easier. If the pus is subcuticular, its site is obvious; but the deep extension of a subcuticular abscess is not necessarily at its centre. If pus is subcutaneous, its site may be recognized by localized tenderness and a slight blue discoloration of the overlying skin.

Operation is done under local anaesthesia, and a bloodless field is essential. Procaine 2 per cent without adrenaline is used to block the nerves at the base of the finger for digital lesions, and at the wrist for lesions of the hand. Application of the tourniquet before the nerve block is made increases its efficiency. For the fingers rubber tubing stretched round the base and clipped with artery forceps is adequate, and for more proximal lesions a sphygmomanometer cuff on the arm. Before application of the tourniquet the limb is elevated, but no attempt is made to empty it completely of blood. The incision is made over the point where the abscess is nearest the surface, so that the minimum of uninfected tissue is opened, and in a direction parallel with Langer's lines. Pus having been located, the incision may be enlarged according to the extent of the abscess as determined by probing. Pus and loose slough are mopped out of the cavity, which is then carefully inspected for possible complications, such as bare bone or tendon sheath.

If there is a subcuticular component of a deep abscess it is unroofed and mopped out. The track to the deep part can then be identified in the floor and its extent determined by probing. If necessary the opening into the deep part can be enlarged, and this is usually advisable if it contains

slough, which will not be easily discharged through a small hole. In the fingers no drains are used; for palmar abscesses a greased calico strip may be laid between the wound edges to prevent premature healing. Draining of the wound may be helped by paring back the edges of the skin so that it has the shape of a narrow diamond. This is very useful for the horny palmar skin which swells and obliterates the opening when sodden by discharge. The wound is dressed with dry gauze only, and splinting is continued until oedema and cellulitis have subsided.

Penicillin. The treatment outlined is combined in various ways with penicillin therapy, both systemic and local. Of its value in a few well-defined groups, such as tendon sheath infection, there can be no doubt. But for the great variety of infections seen at any time from a day to weeks after onset, it is not yet possible to offer any precise definition of its scope.

Systemic penicillin has been used on the same indication as rest immobilization—i.e., to control spread of infection. The most serious cases are admitted and 3 hourly injections of 30,000 units given. For the systemic treatment of outpatients the only method found effective is a daily injection of 300,000 units in archis oil-beeswax suspension. Cases treated early with penicillin and rest may resolve completely, as they sometimes did with rest alone. If treatment is begun later after tissue death has occurred and suppuration probably started, spread of infection is still controlled, but the fate of the local lesion is less certain. Systemic penicillin produces rapid improvement, and usually relieves pain; hence there is every encouragement to postpone drainage. Penicillin also eliminates the dangers of spreading the infection previously associated with early operation. This is well illustrated in tenosynovitis, in which early operation used to be followed by cellulitis round the incisions for opening the sheath, but with penicillin can be undertaken without risk of this complication. Unless, therefore, there is hope of spontaneous resolution, it appears more logical to accelerate rather than to delay surgical treatment. Operative treatment short of total extirpation of the affected area cannot benefit a patient with an acute infection during the period of spread. With

penicillin cover early excision of a focus of infection may be possible to perform.

SPINAL ANAESTHESIA IN OVER 5000 VAGINAL DELIVERIES—*Western Jour. Surg. Obst. and Gynecology, Apr. 48.*

Rogers reviews 5837 cases of vaginal delivery in 5067 of which spinal anaesthesia was used (between 1943 and 47) 770 had nitrous oxide. From 3 to 10 mg. of tetracaine hydrochloride in 1.5 to 2 per cent dextrose solution is used. This solution makes it relatively easy to control the height of the anaesthetic. The average dose used is 6 mg. tetracaine which will ordinarily produce complete anaesthesia for one or two hours. The anaesthetic is administered with the patient lying on her left side, the head of the table being elevated 2 or 3 inches. There were no maternal or foetal deaths and no neurologic complications. Spinal anaesthesia is not a panacea in obstetrics, but when judiciously used offers a safe means of painless normal delivery.

T. N. S. R.

FRUCTOSE AND FRUCTOLYSIS IN SEMEN, IN RELATION TO FERTILITY LANCET—*March, 1948.*

Dr. Mann asserts that the survival of spermatazoa in ejaculated semen depends largely on the supply of nutrient material in the seminal plasma. The nutrient substances present in the seminal plasma is a reducing and glycolyzable carbohydrate. The nature of the latter remained unknown till recently when chemical investigations showed that the seminal sugar is *D-fructose* and on the amount of this sugar in the seminal plasma depends the survival of the spermatozoa. Testicular hormone controls the formation and secretion of fructose in the male accessory glands. The amount of fructose present in semen can be measured colorimetrically. A low fructose level in the semen suggests either hormonal or spermatozoal deficiency. Fructose disappears from semen incubated *in vitro*; the rate of fructolysis indicates the amount of spermatozoal metabolic activity. This lysis plays an essential part in the survival of stored spermatozoa as used in artificial insemination.

T. N. S. R.

AUTO-TRANSPLANTATION OF JOINT CAPSULE IN RHEUMATOID ARTHRITIS—*Acta Medica Scandinavica* Stockholm, Feb. 48.

Novotny tries to produce a state of desensitization by means of a transplantation of the diseased tissue of the capsule, preferably from the patient's knee-joint subcutaneously to the lower umbilical region. In 11 of the 12 cases described a favourable post operative reaction appeared with reduction of pain and swelling and an increase of the mobility of the joints. Of these 11, seven have remained in a better condition after operation over a period of observation of 12 to 18 months.

T. N. S. R.

PEDIATRIC APPROACH TO TONSILLECTOMY—*Arch. of Disease in Childhood*, London, March, 48.

Glover counsels the exercise of great caution in approaching the problem of Tonsillectomy, the incidence of which in children of 5 to 7 years remains excessive in England. Tonsils should not be considered "infected" or "diseased" by clinical examination. As their function includes the arresting of pathogenic organisms, the fact that pathogens can be found in them is no justification for operation. Tonsillectomy should command the respect due to a major operation. In some cases it is followed by unpleasant sequelae. Tonsillar remnants and stumps may be and are often more harmful than the original tonsils. The most reliable indi-

cations is the occurrence of repeated frequent attacks of acute tonsillitis, which cannot be explained by extraneous infection. Frequent colds, chronic nasal catarrh and otitis media are misleading. To remove the tonsils to cure sinus troubles is to place the cart before the horse. Certain other indications including bronchitis, asthma, and nephritis are definitely contra-indications. The liability to bronchitis and pneumonia is increased in the tonsillectomized.

T. N. S. R.

ULTRA-VIOLET BLOOD IRRADIATION THERAPY IN ACTIVE VIRUS OR VIRUS-LIKE INFECTIONS—*Rev. Gastroenterology*, April, 1948.

The technique of this therapy consists of withdrawing approximately 3 per cent of the patients' total blood volume, citrating the withdrawn blood, and immediately passing the citrated blood through a Knott haemo-irradiator, which exposes the blood safely and efficiently to high intensity ultra violet rays. The irradiated blood is then turned to the patients' venous circulation. All the 43 patients with early and of the 27 with moderately advanced infection rapidly recovered and 8 out of the 94 of the apparently moribund ones. The subsidence of toxic symptoms in patients with poliomyelitis of bulbo-spinal and spinal type with primary atypical or virus pneumonia with mumps and with acute herpes occurred with striking regularity in one to three days. No adverse effects and reactions were noticed.

T. N. S. R.

ASSOCIATION NOTES

COIMBATORE BRANCH

President: Dr. N. K. Sampath
Vice-President: Dr. C. Nanjappa
Secretary: Dr. A. G. Leelakrishnan
Associate Secretary: Dr. S. Ganapathy
Treasurer: Dr. T. V. Sivanandam

The monthly clinical meeting of the Association was held at 6 p.m. on 10-1-49 in the Head Quarters Hospital, Coimbatore with Dr. N. K. Sampath, the President in the Chair. Fifty Five members were present.

After Tea and reading of the minutes of the last meeting four more representatives to the Provincial Council were elected and the payment of the T. A. for the Secretary to attend the Provincial Council Meetings was not approved.

Dr. P. K. Kalyanaraman demonstrated a case of Idiopathic Eosinophilia and another case of dextrocardia with complete transposition of the viscera. Dr. P. S. Dorairaja read the case report of a lung abscess case who could not be brought for demonstration.

After a vote of thanks to the host Dr. L. Muniswamy and the D. M. O. and the Matron of the hospital for allowing the use of the Nurses Hall, the function terminated at 8-15 p.m.

MADURA BRANCH

President: Dr. P. Vadamalayan
Vice-President: Dr. K. Balakrishnan
Secretary: Dr. K. G. Ramabadran
Treasurer: Dr. A. S. Annamalai

Proceedings of the 21st Annual Conference of the Madura Medical Association held on 26-2-1949

The 21st annual conference of the Madura Medical Association was held on Saturday, the 26th February 1949 in the Victoria Edward Hall, Madura.

About 90 doctors from the town and mofussil attended. The meeting began at 10-30 a.m. with Dr. P. Vadamalayan, the president, in the chair.

After prayer by Kumari Vijayalakshmi, the following condolence resolutions were moved from the chair and passed, all standing. "The Madura Medical Association places on record its deep sense of sorrow at the demise of Dr. T. S. Venkataraman, who as a member of its Governing Body and as

its Treasurer rendered valuable service to the Association." "The Madura Medical Association places on record its deep sense of sorrow at the sudden demise of Dr. T. P. Balaji Rao, an active member of the Association."

The President was requested to forward copies of the resolution to the members of the bereaved families.

Printed copies of the Annual Report, statement of accounts, Auditors report and Budget were distributed to the members.

Proposed by Dr. G. A. Naidu and seconded by Dr. K. S. Narayanan, the annual report which was read by

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Dr. S. G. Fletcher, the Hony. Secretary was adopted.

The Annual statement of accounts and the Auditor's report were taken as read and adopted, being proposed by Dr. A. K. Rajagopalan and, seconded by Dr. G. A. Naidu.

The Budget was presented by Dr. S. G. Fletcher. Dr. K. G. Ramabadrán proposed an amendment, to increase the journal costs by another Rs. 100/- to enable the association to subscribe for more journals and to cut that amount from the socials. This was seconded by Dr. S. Kanthimathinathan.

The Budget as amended was passed unanimously.

Dr. S. G. Fletcher then announced the names of the new-Office-bearers unanimously elected for the year 1949.

Dr. P. Vadamalayan, M.B.B.S., *President*
 „ K. Balakrishnan, M.B.B.S., *Vice-President*
 „ K. G. Ramabadrán, L.M.P., *Hony. Secretary*
 „ A. S. Annamalai, M.B.B.S., *Hony. Treasurer*

Members of the Governing Body

Dr. A. Narayana Menon, M.B.B.S.
 „ M. N. Rajan, M.B.B.S.
 „ M. Venkatachalam Chetty, L.M.P.
 „ T. S. Renga Iyengar, L.M.P.
 „ J. S. Victor, L.M.P.
 „ G. A. Naidu, M.B.B.S., F.D.S.,
 (London).

Proposed by Dr. S. Kanthimathinathan and seconded by Dr. A. K. Rajagopalan, the following members were elected to the Provincial Council of the Indian Medical Association.

1. Dr. A. K. Rajagopalan, L.M.P.
 2. „ S. Kanthimathinathan, L.M.P.
 3. „ N. Krishnamoorthy, L.M.P.
 4. „ A. Narayana Menon, M.B.B.S.
- Dr. K. G. Ramabadrán as Hony. Sec-

retary is an ex-officio member of the Provincial Council.

Dr. K. G. Ramabadrán and Dr. K. Balakrishnan were elected to the Central council of the I. M. A., proposed by Dr. S. G. Fletcher and seconded by Dr. G. A. Naidu. Dr. K. Ramachandran, M.S. was unanimously elected as Collaborator of the journal of the I. M. A. Proposed by Dr. S. G. Fletcher and seconded by Dr. K. G. Ramabadrán.

Dr. A. K. Rajagopalan spoke a few words about the Indian Health Institute and handed a cheque from the firm for Rs. 100/-towards the conference.

Messages wishing the conference success, were read from the following:—

1. Hon. Dr. T. S. S. Rajan
2. Dr. K. C. Nambiar
3. Dr. D. V. Venkappa
4. Dr. T. S. Thirumurthi and
5. Hony. Secretary, Coimbatore District Medical Association.

The following resolution was moved by Dr. K. G. Ramabadrán, seconded by Dr. G. A. Naidu and supported by Dr. A. N. Menon and adopted. "This meeting of the Madura Medical Association places on record its appreciation of the services rendered by Dr. S. G. Fletcher as Hony. Secretary during the past two years."

Dr. Vadamalayan in his presidential speech stressed the need for the association to procure a building of its own in a suitable site in the city and hoped that during the present year some definite advance would be made towards that objective. He also hoped that a Tuberculosis Sanatorium would very soon be started in the Madura District. He deplored that the Government had postponed the construction of the Madura Medical College on account of want of funds. If rural medical relief had to be extended it would mean more doctors and Madura with its excellent hospital and the wealth of clinical

material was a most suitable place for a college. He hoped that all members of the profession would join the association as members and expressed the wish that some of the monthly meetings should be held in various places in the district during the coming year.

Dr. R. Subramaniam, B.Sc., M.D., M.R.C.P., (London) of Madras then gave a highly instructive lecture on Congenital diseases of the Heart. He said that the outlook on the subject had changed entirely during recent years after the introduction of surgery in the treatment of conditions like Co-arc-tation of the Aorta, Patent Ductus Arteriosis and Pulmonary stenosis. The subject was still in its infancy in India but already a beginning had been made in Madras in ligating Patent Ductus Arteriosis. With the help of skiagrams of various patients he explained the important signs of each of these conditions and also mentioned the radiological appearances of two comparatively innocent conditions (i.e.) Patent intra-arterial defect and Patent intra-ventricular defect. The most important complication of congenital heart disease were Acute and subacute Bacterial endo-carditis and Rheumatic endo-carditis. Surgery (i.e.) Resection and end to end anastomosis in the case of Co-arc-tation of the Aorta and mere ligature or ligature and excision in the case of Patent Ductus Arteriosis, were of great value in preventing these complications and contribute to the long life of the patient. He also mentioned the value of Cardiac Catheterisation in the diagnosis. The lecture was followed by a discussion the members then adjourned for Lunch in the spacious verandha of V. E. Hall upstairs.

The members again assembled at 3 p.m. to hear Dr. T. H. Somerville, M.A., M.B., F.R.C.S. (London) on "Recent advances in Abdominal Surgery". He mentioned that the recent advances in

General and Spinal anaesthesia, and bacteriostatic drugs like Sulpha drugs and Penicillin, and the methods of storing blood and plasma for transfusion had made the thoracic approach to upper abdominal surgery quite easy. He explained in particular about the operation of Vagotomy which he claimed as an effective substitute for gastrectomy in case of Duodenal ulcer and explained with the help of diagrams projected on the screen through an Epidiascope, the various stages in the operation and also comparative pre-operative and postoperative F. T. M. results of the various surgical procedures for the treatment of Duodenal ulcer. He also explained the operation of total Pancreatico-Duodenectomy in cases of Carcinoma of the Pancreas and said that he preferred the transverse incision to the vertical incision in major abdominal surgery.

Dr. K. Ramachandran started an interesting discussion on the rationale of merely tying the pyloric vessels as opposed to complete removal of the pyloric mucosa and gastrectomy for effective reduction of acidity. Dr. P. Vadamalayan gave an account of the gastric surgery done in the Erskine Hospital during the past 10 years, the main indications for the various types of procedures adopted and the results as to recurrence, mortality etc.

Dr. S. G. Fletcher announced a donation of Rs. 100/- for fresh magazines from Mr. A. P. Kesavan. He then proposed a vote of thanks to the lecturers, the V. E. Hall authorities and Regal Cinema authorities, the donors, the President and all the members who attended the conference. With the singing of Vazhia-Senthamil by Kumari Vijayalakshmi, the session ended.

The members adjourned to tea and were later entertained to a film "Loves of Carmen" by the kind courtesy of the proprietors of the Regal Talkies.

RAMNAD BRANCH

President: Lt. Col. M. A. Parthasarathy
Vice-President: Dr. T. S. Shetty
Secretary & Treasurer: Dr. S. Sundaresan.
Jt. Secretary: Dr. K. Venkataraman

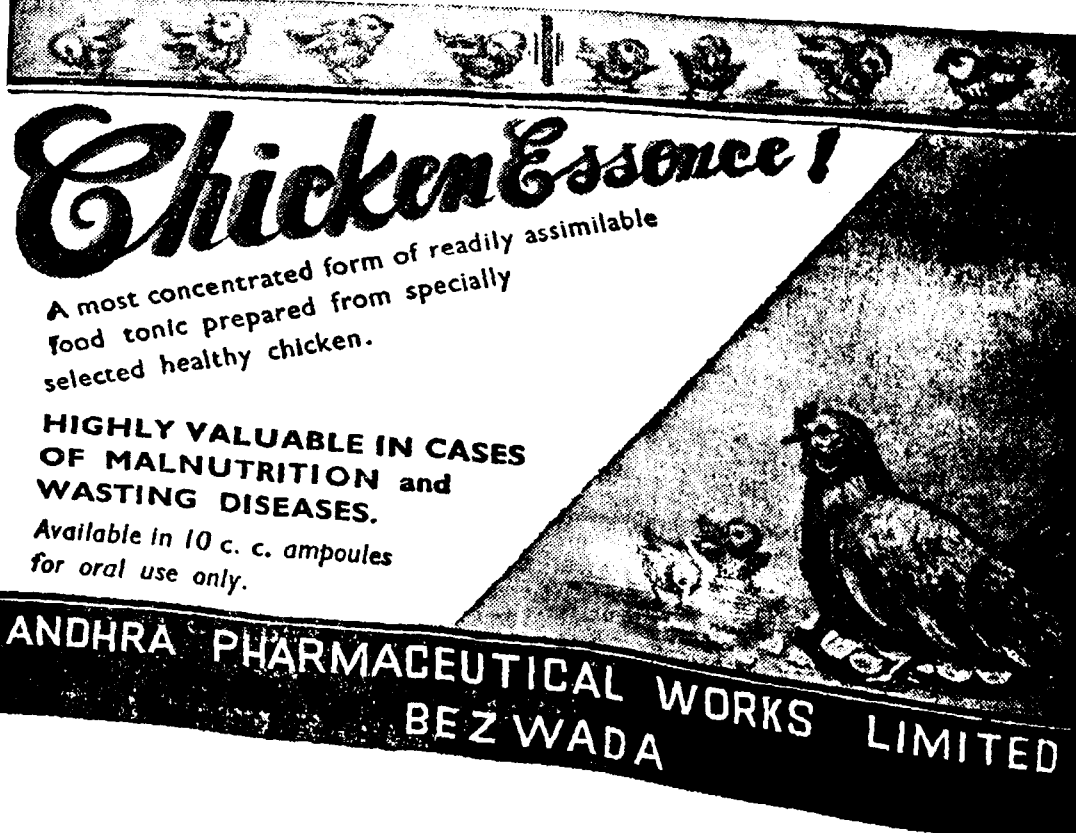
The Inaugural Meeting of the Ramnad Branch of the Indian Medical Association was held at the Chettinad Boat House at 5 p.m. after Tea.

There was a meeting of the Provincial Council of the I. M. A. in the same place earlier in the evening. Members of the Council from Madras, Trichy and Madura had responded to the invitation. There were about 25 doctors present.

In the unavoidable absence of the President and the Secretary, the Vice-President took the Chair.

Dr. Sam Williams, M.B.B.S., F.C.P.S. Karaikudy spoke on "Abdominal Tuberculosis".

The meeting terminated after a vote of thanks.



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A most concentrated form of readily assimilable food tonic prepared from specially selected healthy chicken.

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Available in 10 c. c. ampoules for oral use only.

ANDHRA PHARMACEUTICAL WORKS LIMITED
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TRIAL OF STREPTOMYCIN IN PLAGUE

To

THE EDITOR,

Indian Medical Gazette

SIR

With reference to your editorial on streptomycin in plague, vide your issue Indian Medical Gazette, 82, No. 2, p. 675, you have given priority to Sokhey. May I remind you that whereas Sokhey made a personal communication to you about his work in December 1947 my paper on streptomycin in plague, since published in the Lancet, issue of 3rd January, 1948, was received by the Editor of the Lancet on 27th November, 1947. In proof hereof, I am sending to you the true copy of the letter received from the Editor, 'The Lancet'.

In fairness to me I would suggest that since my work is the first of, its kind priority should be given to me.

Yours, etc.,

P. V. KARAMCHANDANI,
 M.B., B.S., F.R.C.P. (Edin.),
 Lieutenant-Colonel, late I.M.S.

BELLARY
 16th December, 1948

THE LANCET,
 7, ADAM STREET, ADELPHI,
 LONDON, W. C. 2.
 12th November, 1948.

Lt. Col. P. V. KARAMCHANDANI,
 M.B., B.S., F.R.C.P. (Edin.),
 District Medical Officer,
 Bellary, South India.

DEAR SIR,

The Editor asks me to say that your paper on streptomycin in plague which we published in our issue of 3rd January, 1948, was received in this office on 27th November, 1947.

Yours truly,

(Sd.)
 Editorial Assistant.

On Lt. Col. P. V. Karamchandani's request we gladly publish the above correspondence.

* (True copy)

THE USE OF TITLE, "DOCTOR"—BY PRACTITIONERS

All practitioners of Modern system of medicine can use the courtesy title of "Dr." before their names.

Licentiates in Indian Medicine and those registered under Class I of the register of practitioners of Indian Medicine can also use the courtesy title of "Dr." before their names but must include between Dr. and their name (Ind.). They can also add to their names their recognised qualifications and indicate that they are registered practitioners of Indian Medicine.

Hakims and Vaidas should not use the prefix "Dr." but may use Hakims or Vaid and indicate that they are registered practitioners of Indian Medicine.

INDIAN MEDICAL COUNCIL ACT AMENDMENT

As per resolution No. 10 of the council of the South Indian Provincial Branch of I.M.A., dated 19th February 1949, the following waited on deputation on the Hon'ble Rajkumari Amrit Kaur, Minister of Health, Government of India and submitted a Memorandum urging on the Government of India to amend the Indian Medical Council Act so as to have a minimum standard of medical education and to give due representation to the licentiates on the Indian Medical Council and to enter all the registered practitioners such as licentiates, graduates, and others in the alphabetical order. The deputationists also urged that adequate facilities should be provided by the Government for licentiates to take the condensed M.B. course and to recommend to the Provincial Government, that Asst. Surgeon Grade II should automatically be promoted to Grade I after 10 years of service. The Hon'ble Minister gave a patient hearing and discussed the various points raised. She informed the deputationists that the minimum standard of medical education would be the M.B., B.S., degree. Regarding placing all registered practitioners, in the alphabetical order, she would do the needful after consulting the Indian Medical Council.

Regarding affording facilities for licentiates to take the condensed M. B. Course, and automatically promoting Grade II Asst. Surgeons to Grade I after 10 years of service, she promised to address the Provincial Governments to do the needful in the matter.

P. A. S. RAGHAVAN,
President.

List of deputationists

1. Dr. P. A. S. Raghavan, Trichinopoly.
2. Dr. Col. T. S. Shastri, Madras.
3. Dr. G. Joseph Gnanadickam, Trichinopoly.
4. Dr. D. V. Venkappa, Madras.

The MISCELLANY—March, 1949

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Calcium Sodium Lactate-Sara
with Dicalcium Phosphate and
Vitamin D.

Indicated in all cases of general debility, rickets, etc.
Ideal calcium tonic for expectant and nursing mothers



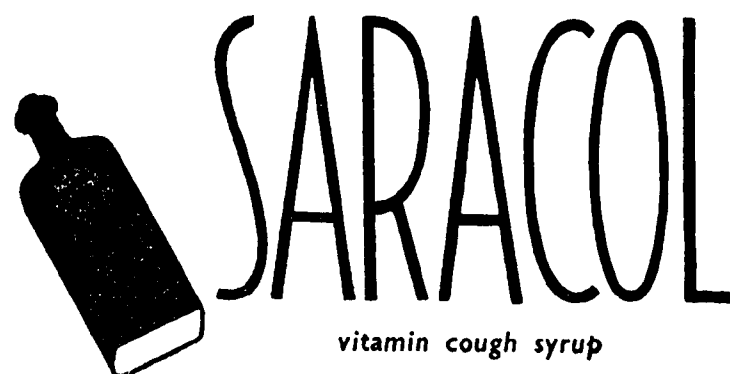
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(Pharmaceutical Division)



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Sara
AHMEDABAD
SHILPI



Each fluid ounce of the preparation contains:

Pot. Guaiacol Sulphonate	..	5.0	grs.
Ephedrine Hydrochloride	..	1.0	..
Tehpin Hydrate	..	0.4	..
Ethylmorphine Hydrochloride	..	0.3	..
Sodium Benzoate	..	0.3	..
Chloroform	..	2.8	..
Glycerol	..	28.0	..
Vitamin C	..	1.5	..
Honey and flavouring		q.s.	

CALCIUM LEVULINATE-SARA adds to the curative value of the preparation since it influences many respiratory diseases, relaxing bronchial spasm and decreasing the secretion of mucosa of the respiratory tract.

INDICATIONS.

Bronchitis, pneumonia, influenza, coughs, colds, whooping cough, asthma and all diseases of the respiratory tract.

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ODDS & ENDS

D. F. P. is an effective miotic—stronger in action than Eserine.

In allergic urticaria, it must be remembered, antihistamine drugs are suppressive and not curative.

'Clinitest' is a simple method of testing the urine for sugar, which dispenses with the need for a spirit lamp, etc.

Licking the postage stamps may be a dirty habit, but not an unhealthy one in U.S.A. The gum there is said to contain Vitamin B.

Is there any risk of acquiring an affection of the skin through handling dirty currency notes? Virtually none, says a writer in *Practitioner*.

It is proposed to hold a British Commonwealth Medical Conference every year—the first to be convened on June 6th, 1949, in Canada.

The XVI International Congress of Ophthalmology will be held in London from July 17-21, 1950 under the Presidency of Sir Stewart Duke-Elder

A new organisation, called the Fellowship for Freedom in Medicine, has been formed in London, as an opposition to the National Health Service Scheme.

A middle aged woman in Los Angeles seems to be living on borrowed blood. She has had her 68th transfusion in nearly a year.

"The doctor over there speaks always in lakhs."

"Is he a bacteriologist?"

"No, a penicillin maniac."

"Well, doctor, I want to take an apple a day and keep you away."

"If you persist in your bathless habits, sure, you will keep everybody away."

Doctor: "You must be smoking heavily. How many cigarettes a day do you smoke."

"Only just one after another, doctor."